FCC PART 24 TEST REPORT

for

redKnows vehicle, redKnows Marine
FCC ID:USW-SBX-3
Model No.: SBX-3

of

Applicant: **AxTech AB**
Address: **S:t Jörgens Väg 4, 422 49 Hisings Backa, Sweden**

Tested and Prepared

by

ETS DR. GENZ TAIWAN PS CO., LTD

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU
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Report Number: W6D20610-7526-P-24
FCC ID: USW-SBX-3

Certification of Test Report

Applicant : AxTech AB

Manufacturer : AxTech AB

Tested Equipment :

Type Description	: redKnows vehicle, redKnows Marine
Model Number	: SBX-3
Series Number	: N/A
Brand Name	: redKnows
Operation Frequency	: 1850.2 MHz -1909.8 MHz
RF Output Power	: 32.48 dBm
Power Supply	: 12 VDC

Regulation Applied : 47CFR Part 24 (2005-10)

Test Method : 47CFR Part 2 (2005), TIA/EIA-603B (2002) and ANSI C63.4(2003)

I HEREBY CERTIFY THAT: The test results written in this report were derived conscientiously in accordance with the requirements and procedures of 47CFR Part 2(2005) and TIA-603-B(2002), and it was found that the device described above is in compliance with the applicable limits specified in 47CFR Part 24.

Note:

1. The result of this test report is valid only in connection to the sample has been tested at the laboratory of ETS Product Service (Taiwan).
2. This test report shall always be duplicated in full pages unless the written approval of the testing laboratory is obtained.

Test Engineer:

Date	ETS-Lab.	Name	Signature
December 5, 2006		Jay Chaing	Jay Chaing

Technical responsibility for area of testing:

Date	ETS	Name	Signature
December 5, 2006		Steven Chuang	Steven Chuang

TABLE OF CONTENTS

1. Summary

1.1 Description of tested equipment

The equipment tested is a GSM based positioning alarm. The functions of SBX-3 are controlled with the wireless Remote Controller and a mobile phone trough SMS and phone calls. The operation frequency bands and rated RF output power are listed as follows:

1850.2-1909.8MHz (Cellular, Part 24), 1.77W

This test report only contains test requirements specified in 47CFR Part 24 for GSM function, for other functions, please refer to separate test report with respect to the relevant test standard and specification.

1.2 Date of testing processing

Test sample received: November 01, 2006

Test finished: December 04, 2006

Other Information: None

1.3 Modification Information

No modification was made during the all test items been performed.

1.4 Test standards

Technical standard : FCC Part 2(2005), TIA-603-B(2002), ANSI C63.4(2003)

Deviation from test standard: None

Additional information : This device, SBX-3, is based on the test report number W6M20610-7519-P-24 (Model No.: VCSTS-6). The differences between them are the brand name and the model name.

1.5 Summary of test result

Band: 1900MHz

Section in this Report	Test Item	Relevant Section	Verdict
3.2	RF power output	2.1046(a), 24.232(b)	Pass
4.2	Modulation characteristics	2.1047	N/A
5.2	Occupied bandwidth	2.1049(h)	Pass
6.2	Spurious emissions at antenna terminals	24.238(a), 2.1051	Pass
7.2	Field strength of spurious radiation	24.238(a), 2.1053	Pass
8.2	Frequency stability	2.1055(a) 2.1055(d)	Pass

2. General Information

2.1 Testing laboratory

2.1.1 Location

OATS
No.5-1, Shuang Sing Village,
LiShuei Rd., Wanli Township,
Taipei County 207, Taiwan (R.O.C.)

Company
ETS DR. GENZ TAIWAN PS CO., LTD.
6F, NO. 58, LANE 188, RUEY-KUANG RD.
NEIHU, TAIPEI 114, TAIWAN R.O.C.
Tel : 886-2-66068877
Fax : 886-2-66068879

2.1.2 Details of accreditation status

Accredited testing laboratory
A2LA-registration number: 2300.01
FCC filed test laboratory Reg. No. 930600
Industry Canada filed test laboratory Reg. No. IC 5679
PTCRB Accredited Type Certification Test House

2.2 Details of approval holder

Name	: AxTech AB
Street	: S:t Jörgens Väg 4
Town	: 422 49 Hisings Backa
Country	: Sweden
Telephone	: +46 31 55 88 66
Fax	: +46 31 55 88 69

Manufacturer:
(if applicable)

Name	: ./.
Street	: ./.
Town	: ./.
Country	: ./.

2.3 Description of Tested System

The EUT was tested alone without the Accessories or Peripherals.

Equipment	Model No.	Series No.	Software	Cable information	Note
N/A					

Frequency Range:

Band: 1900MHz

Frequencies Selected to be investigated:

Band: 1900MHz
Low Frequency (ch 512) : 1850.2 MHz
Mid Frequency (ch 661) : 1880 MHz
High Frequency (ch 810) : 1909.8 MHz

Antenna Type : GPS Antenna

Antenna Gain : 0 dBi

Power supply : 12 VDC

2.4 Test environment

Temperature	:	27 °C
Relative humidity content	:	54 %
Air pressure	:	86-103 Kpa

2.5 General Test Requirement

Radiated Emission: For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna.

The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

For hand-held devices, a exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

2.6 Test Equipment List

No.	Test equipment	Model/SN	Manufacturer	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10 842121/013	R&S	2007/10/15
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5 840731/011	R&S	2007/10/15
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D 137	Schwarzbeck	2007/10/15
ETSTW-CE 006	IMPULS-BEGRENZER PULSE LIMITER	ESH3-Z2 100226	R&S	In House Certificate
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U MAA0305-009	GIANT FORCE	2007/8/16
ETSTW-CE 012	Dual-Phase-V-Network	NNB-2/16Z 03/10201	Telemeter	2007/6/12
ETSTW-RE 002	Function Generator	33220A MY43004982	Agilent	2007/10/13
ETSTW-RE 003	EMI TEST RECEIVER	ESI 831438/001	R&S	2007/10/19
ETSTW-RE 004	EMI TEST RECEIVER	ESI 831459/012	R&S	2007/10/29
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10 843207/020	R&S	2007/10/11
ETSTW-RE 017	ANTENNA	HL025 352886/001	R&S	2008/5/3
ETSTW-RE 021	SWEEP GENERATOR	SWM05 835130/010	R&S	2007/10/10
ETSTW-RE 027	Passive Loop Antenna	6512 34563	EMCO	2007/6/29
ETSTW-RE 028	Log-Periodic DipoleArray Antenna	3148 34429	EMCO	2008/5/25
ETSTW-RE 029	Biconical Antenna	3109 33524	EMCO	2008/5/25
ETSTW-RE 030	Double-Ridged Waveguide Horm Antenna	3117 35224	EMCO	2008/5/2
ETSTW-RE 032	Millivoltmeter	URV 55 849086/013	R&S	2007/10/10
ETSTW-RE 034	Power Sensor	URV5-Z4 839313/006	R&S	2007/10/10
ETSTW-RE 042	ANTENNA	HK116 100172	R&S	2007/1/13
ETSTW-RE 043	ANTENNA	HL223 100166	R&S	2008/5/7
ETSTW-RE 044	ANTENNA	HL050 100094	R&S	2008/5/28
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160 9160-3185	Schwarzbeck	2007/5/18
ETSTW-RE 055	SPECTRUM ANALYZER	FSU-26 200074	R&S	2007/7/27
ETSTW-GSM 02	Universal Radio Communication Tester	CMU 200 103489	R&S	2007/10/17
ETSTW-GSM 11	GSM 850,900,1800,1900 Test system	TS8950G	R&S	2007/4/30
ETSTW-GSM 16	TEMP.&HUMIDITY CHAMBER	GTH-120-40-1P-U MAA0501002	GIANT FORCE	2006/12/28
ETSTW-GSM 18	AUDIO ANALYZER	UPL16 100173	R&S	2007/10/27
ETSTW-GSM 23	SPLITTER	4901.19.A None	SUHNER	Function Test

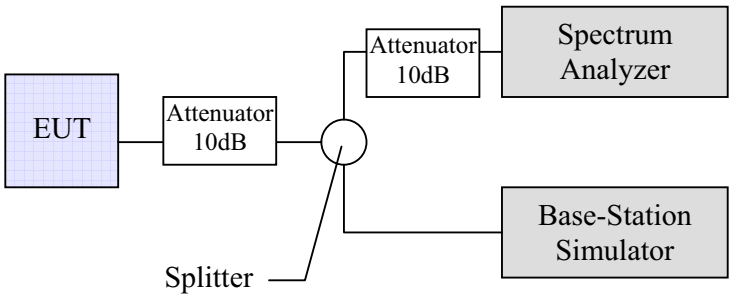
3. RF Power Output

3.1 Test procedure

3.1.1 Conducted Method

Per 47CFR Part 2.1046, the RF power output shall be measured at the RF output terminals and following procedure is employed:

The transmitter output was connected as the following figure:



The whole connection system is calibrated with a standard signal generator. Power on and make a link form simulator to EUT and then set the EUT to maximum output power.
Measure the RF power with the spectrum analyzer in accordance the following settings:

RBW: 300kHz for Frequency below 1GHz and 1MHz for Frequency equal to and above 1GHz.
VBW: 300kHz for Frequency below 1GHz and 1MHz for Frequency equal to and above 1GHz.
Span: 2MHz
Sweep: 3s

The power output at the transmitter antenna terminal is then determined by assign the value of the corrected factor to the spectrum analyzer reading.

Tests were performed at three frequencies (low , middle and high channels) and operation mode selected.

3.1.2 Radiated Method

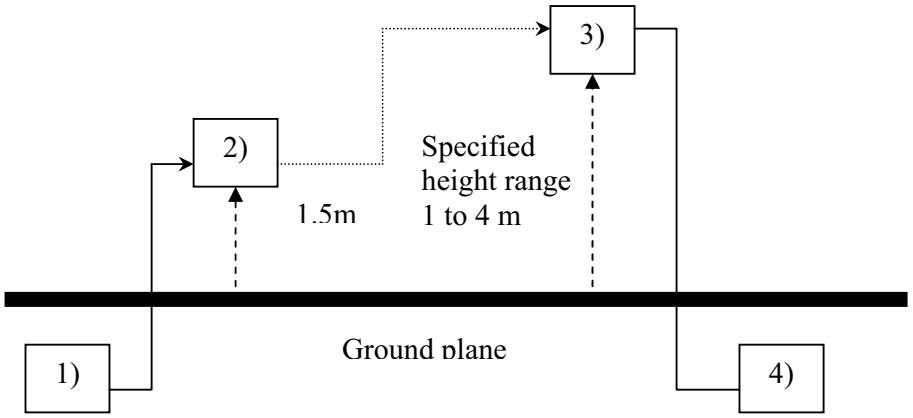
If the conducted measurement is not practical due to the integral antenna, the radiated measurement will be performed in accordance the following procedure:

The EUT was positioned on a non-conductive turntable, 0.8mabove the ground on an open test site.
The radiated emission at the fundamental frequency was measured at 3m distance with a test antenna and spectrum analyzer.

Worst case emission was recorded with the rotation of the turntable and the raising and lowering of the test antenna.

Substitution RF power Measurement at ETS Taiwan
General :

The applied substitution method follows ANSI/TIA/EIA-603,ANSI/TIA/EIA-102.CAAA or the appropriate ETSI rules respectively.
The actual signal generated by the EUT can be determined by means of a substitution measurement in which a known signal source replaces the device to be measured.



1) Signal generator ;
2) Substitution antenna ;
3) Test antenna ;
4) Spectrum analyzer or selective voltmeter.

The substitution antenna replaces the transmitter antenna at the same position and in vertical polarization. The frequency of the signal generator shall be adjusted to the measurement frequency.
The test antenna shall be raised or lowered, if necessary, to ensure that the maximum signal is still received. The input signal to the substitution antenna shall be adjusted in level until an equal or a known related level to that detected from the transmitter is obtained in the measurement receiver.
If a fully anechoic chamber is used as test site in order to provide free space conditions there is no need to change the height of the antenna.
The measurement will be repeated in horizontal position.
Calibration :
In order to make this kind of measurement more effective and to avoid subjective measurement faults ETS has installed automatic computer controlled measurement procedures.
With the above described substitution method a test site is calibrated over the full frequency range which is used in suitable frequency steps. For a certain power level on the substitution antenna the received power over the whole frequency range is documented. All necessary antenna gains, cable losses, filter losses and amplifications of preamplifiers are taken in consideration. The summary of this calibration measurement performs a transducer factor that is related to the considered test site and a certain measurement distance. Differences of the radiated power levels of different test samples are determined by internal attenuation of measurement

receiver . The proper function of such test site will be maintained by short term plausibility checks and periodical re-calibration.

Testing :
The test sample will be putted on the table at the defined position and the radiated power will be receiver and documented by the measurement receiver.
On test sites with ground plane the measurement antenna will be lowered and raised to maximum values at significant frequencies.
For peak power measurements the sample is turned by the turntable over 360 degree in order to find the direction with the maximum radiation or to document the max reading with the MAXHOLD function during the rotation.

3.2 Test Results

☐ Conducted Measurement
☑ Radiated Measurement

Frequency (MHz)	ERP (dBm)	EIRP (dBm)	Limit (dBm)	Result
1850.2	28.04	30.19	33	Pass
1880	28.62	30.77	33	Pass
1909.8	30.33	32.48	33	Pass

Note: Please refer to appendix A for plot data.

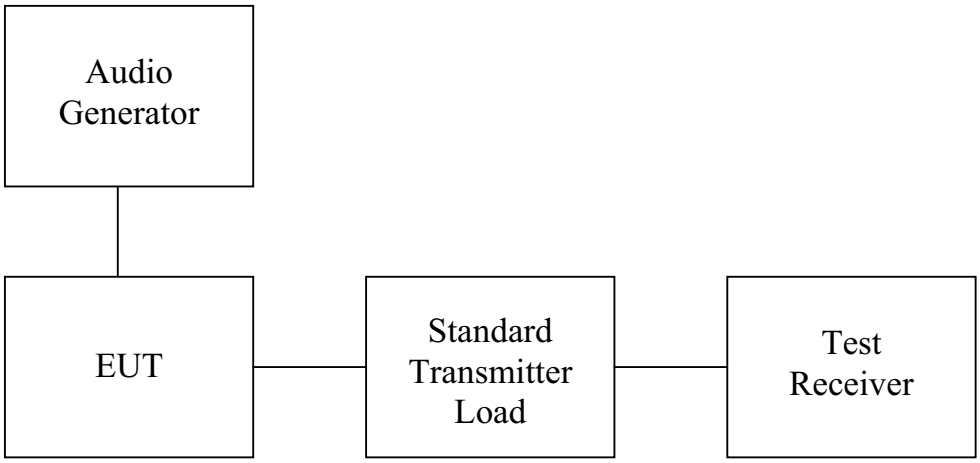
Test equipment: ETSTW-RE 003, ETSTW-RE 043, ETSTW-GSM 02

4. Modulation Characteristics

4.1 Test procedure

☐ A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted.
The audio signal generator is connected to the audio input of the EUT with its full rating. The modulation response is measured at certain modulation frequencies, related to 1000Hz reference signal. Tests are performed for positive and negative modulation.

☐ Equipment which employs modulation Limiting: A curve or family of curves showing the percentage of modulation versus the modulation input voltage shall be supplied. The audio signal generator is connected to the audio input of the EUT with its full rating. The modulation limiting is measured at certain modulation frequencies from 100Hz to 15kHz.



4.2 Test Results

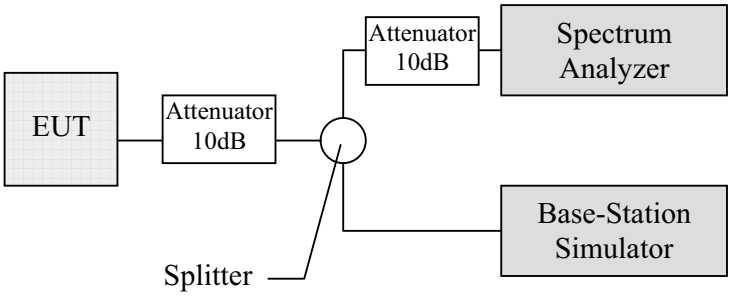
For digital modulation employed, this test item is not applicable.

5. Occupied Bandwidth

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power. Near the carrier an Emission Mask is defined by the standard.

5.1 Test procedure

The RF output of the transceiver was connected as the following figure.
Occupied Bandwidth was measured with a occupied bandwidth function of the analyzer at 99% power was occupied. Then set the spectrum analyzer to cover the upper and lower band edges to measure emission mask.



5.2 Test Results

Occupied Channel Bandwidth (kHz)	
Channel 512	252.505010
Channel 661	250.501002
Channel 810	250.501002
-26dB Channel Bandwidth (kHz)	
Channel 512	336.673347
Channel 661	336.673347
Channel 810	334.669339

Note: Please refer to appendix B for plot data.

Test equipment: ETSTW-RE 003, ETSTW-RE 043, ETSTW-GSM 02

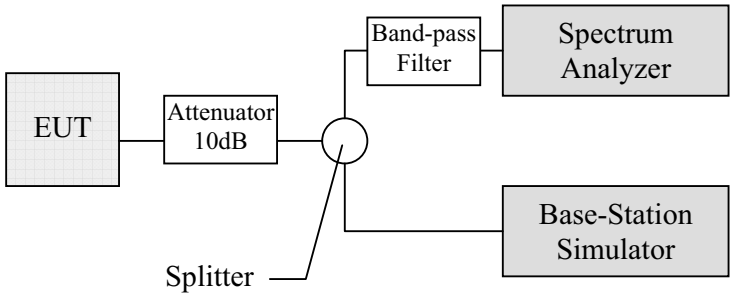
6. Spurious Emissions at Antenna Terminals

6.1 Test procedure

This transmitter output was connected to a calibrated coaxial attenuator, the other end of which was connected to a spectrum analyzer via a three-port splitter. Please refer to the following figure. Transmitter output was derived with the spectrum analyzer in dBm.

The Spurious Emissions at Antenna Terminals was measured by the spectrum analyzer with a suitable notch filter and/or Band-pass filter.

Tests were performed with an unmodulated carrier at three frequencies (low , middle and high channels) and on all power levels , which can be set-up on the transmitters.



6.2 Test Results

CH 512

Frequency (MHz)	Power Measured (dBm)	Compliance Limit (dBm)	Margin (dB)
141.971	-33.70	-13	20.70
970.513	-34.13	-13	21.13
3471.154	-28.75	-13	15.75
6608.974	-33.81	-13	20.81
10525.641	-30.66	-13	17.66
26476.763	-27.57	-13	14.57

CH 661

Frequency (MHz)	Power Measured (dBm)	Compliance Limit (dBm)	Margin (dB)
165.401	-34.54	-13	21.54
473.077	-33.96	-13	20.96
3591.346	-29.38	-13	16.38
7032.051	-33.34	-13	20.34
10384.615	-31.73	-13	18.73
24478.365	-28.50	-13	15.50

CH 810

Frequency (MHz)	Power Measured (dBm)	Compliance Limit (dBm)	Margin (dB)
159.135	-34.28	-13	21.28
415.385	-33.41	-13	20.41
3576.923	-28.75	-13	15.75
7391.026	-34.19	-13	21.19
10967.949	-32.17	-13	19.17
25105.769	-28.09	-13	15.09

Note: Please refer to appendix C for plot data.
Test equipment: ETSTW-RE 003, ETSTW-GSM 02, ETSTW-GSM 23

6.3 Explanation of test result

All factors like cable loss and external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements.

6.4 Calculation of Limit for Spurious at Antenna Terminals

Compliance with § 22.917(a) requires that any emission be attenuated below the transmitter power at least 43 + 10 log10 P (P = transmitter power in Watts).

The compliance limit was calculated as an example per the following:

Maximum transmitter output power: P=1.770109 Watts
Required attenuation: A=43 + 10 log10 P
Limit for Spurious Emissions at Antenna Terminals: L=P-A=-13dBm

7. Field Strength of Spurious Radiation

7.1 Test procedure

The test procedure for filed strength measurement is same as radiated power except for a notch filter or band pass filter is used to avoid the influence of fundamental to the pre-amplifier.

The measurements below 1GHz were performed with a measurement bandwidth of 100kHz, above 1GHz with a bandwidth of 1 MHz.

7.2 Test Results

The measurements of the spurious emission at the upper, center and lower channel.

CH 512

Frequency (MHz)	Polarization (H/V)	Reading Level (dBm)	Corrected Factor (dB)	Result Level (dBm)	Limit (dBm)	Margin
629.415	H	-83.96	31.82	-52.14	-13	39.14
5550.928	H	-54.49	9.17	-45.32	-13	32.32
9250.948	H	-68.24	31.12	-37.12	-13	24.12
629.415	V	-85.54	29.42	-56.12	-13	43.12
5550.928	V	-52.26	8.75	-43.51	-13	30.51
9250.948	V	-68.37	30.36	-38.01	-13	25.01

CH 661

Frequency (MHz)	Polarization (H/V)	Reading Level (dBm)	Corrected Factor (dB)	Result Level (dBm)	Limit (dBm)	Margin
629.415	H	-84.94	31.82	-53.12	-13	40.12
5641.011	H	-55.87	9.62	-46.25	-13	33.25
9401.025	H	-70.61	30.72	-39.89	-13	26.89
629.415	V	-85.84	29.42	-56.42	-13	43.42
5641.011	V	-52.40	9.28	-43.12	-13	30.12
9401.025	V	-70.51	30.52	-39.99	-13	26.99

CH 810

Frequency (MHz)	Polarization (H/V)	Reading Level (dBm)	Corrected Factor (dB)	Result Level (dBm)	Limit (dBm)	Margin
629.415	H	-85.94	31.82	-54.12	-13	41.12
5727.453	H	-57.23	9.91	-47.32	-13	34.32
9545.914	H	-73.34	32.22	-41.12	-13	28.12
629.415	V	-89.14	29.42	-59.72	-13	46.72
3820.699	V	-77.28	49.72	-27.56	-13	14.56
5727.453	V	-55.65	9.64	-46.01	-13	33.01
9545.914	V	-74.48	32.25	-42.23	-13	29.23

Note: Please refer to appendix D for plot data.

7.3 Explanation of test result

Result Level = Reading Level + Corrected Factor

Corrected Factor = SG level – Received level-Cable loss + substitution antenna gain

7.4 Calculation of Limit for Field Strength of Spurious

Compliance with § 22.917(a) requires that any emission be attenuated below the transmitter power at least 43 + 10 log10 P (P = transmitter power in Watts).

The compliance limit was calculated as an example per the following:

Maximum transmitter radiated power: P=1.770109 watt

Required attenuation: A=43 + 10 log10 P

Limit for Spurious Emissions at Antenna Terminals: L=P-A=-13dBm

Test equipment: ETSTW-RE 003, ETSTW-RE 017, ETSTW-RE 042, ETSTW-RE 043, ETSTW-RE 044, ETSTW-GSM 02

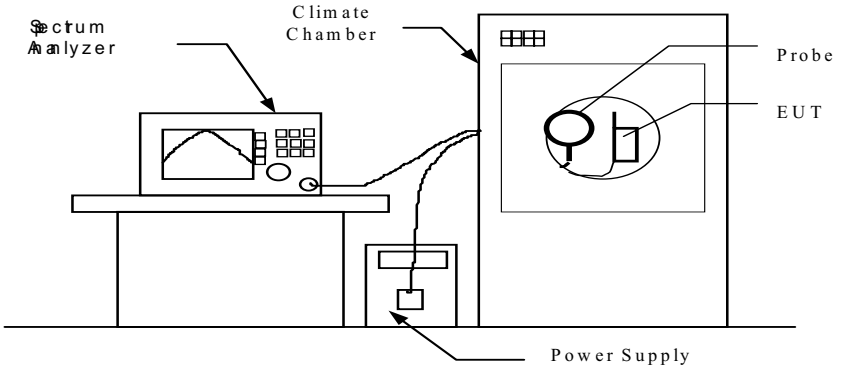
8. Frequency Stability

8.1 Test procedure

☑ The equipment under test was supplied with rated power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable, exited the chamber through an opening made for that purpose.
After the temperature stabilized the frequency output was recorded from the counter.

☐ An external variable power supply was used to supply nominal voltage and 85% to 115% of nominal voltage to the EUT under room temperature. Record the frequencies measured from the counter.

☑ End point voltage: For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer. Then record the frequencies measured from the counter.



8.2 Test Results

8.2.1 Frequency Stability vs. Temperature

CH 512 1850.20002 MHz (It is the based frequency point that measured at nominal temperature and with nominal voltage.)

Supplied Voltage	Temperature (°C)	Frequency Drift (kHz)	Frequency Drift (ppm)	Limit (ppm)
12VDC	-30	0.16	0.086	±2.5
	-20	0.16	0.086	
	-10	0.16	0.086	
	0	0.16	0.086	
	10	0.15	0.081	
	20	0.15	0.081	
	30	0.14	0.075	
	40	0.15	0.081	
	50	0.15	0.081	

CH 661 1880.00001 MHz (It is the based frequency point that measured at nominal temperature and with nominal voltage.)

Supplied Voltage	Temperature (°C)	Frequency Drift (kHz)	Frequency Drift (ppm)	Limit (ppm)
12VDC	-30	0.16	0.085	±2.5
	-20	0.16	0.085	
	-10	0.15	0.079	
	0	0.15	0.079	
	10	0.15	0.079	
	20	0.15	0.079	
	30	0.15	0.079	
	40	0.15	0.079	
	50	0.14	0.074	

CH 810 1909.80001 MHz (It is the based frequency point that measured at nominal temperature and with nominal voltage.)

Supplied Voltage	Temperature (°C)	Frequency Drift (kHz)	Frequency Drift (ppm)	Limit (ppm)
12VDC	-30	0.17	0.089	±2.5
	-20	0.16	0.083	
	-10	0.16	0.083	
	0	0.16	0.083	
	10	0.16	0.083	
	20	0.15	0.078	
	30	0.15	0.078	
	40	0.15	0.078	
	50	0.15	0.078	

8.2.2 Frequency Stability vs. Voltage

CH 512 1850.20002 MHz (It is the based frequency point that measured at nominal temperature and with nominal voltage.)

Supplied Voltage	Temperature (°C)	Frequency Drift (kHz)	Frequency Drift (ppm)	Limit (ppm)
End Point Voltage 10VDC	25	0.17	0.092	±2.5

CH 661 1880.00001 MHz (It is the based frequency point that measured at nominal temperature and with nominal voltage.)

Supplied Voltage	Temperature (°C)	Frequency Drift (kHz)	Frequency Drift (ppm)	Limit (ppm)
End Point Voltage 10VDC	25	0.17	0.090	±2.5

CH 810 1909.80001 MHz (It is the based frequency point that measured at nominal temperature and with nominal voltage.)

Supplied Voltage	Temperature (°C)	Frequency Drift (kHz)	Frequency Drift (ppm)	Limit (ppm)
End Point Voltage 10VDC	25	0.17	0.089	±2.5

Test equipment: ETSTW-CE009, ETSTW-RE 003, ETSTW-RE055, ETSTW-GSM 02

Apendix

A RF Power Output
B Occupied Bandwidth / Emission Mask
C Spurious Emissions at Antenna Terminals
D Filed Strength of Spurious Emission
E EUT Photos

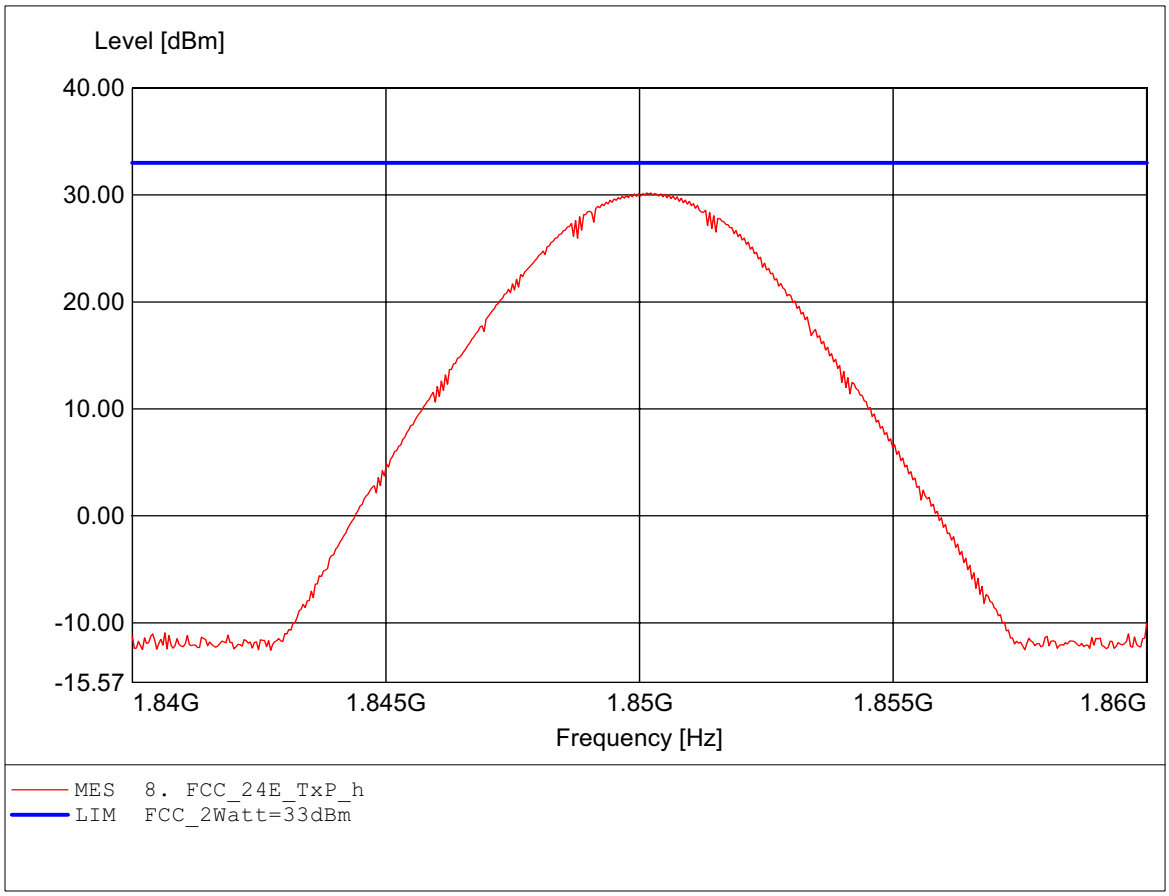
Apendix A

RF Power Output

Equivalent Isotropically Radiated Power

FCC RULES PART 24 SUBPART E

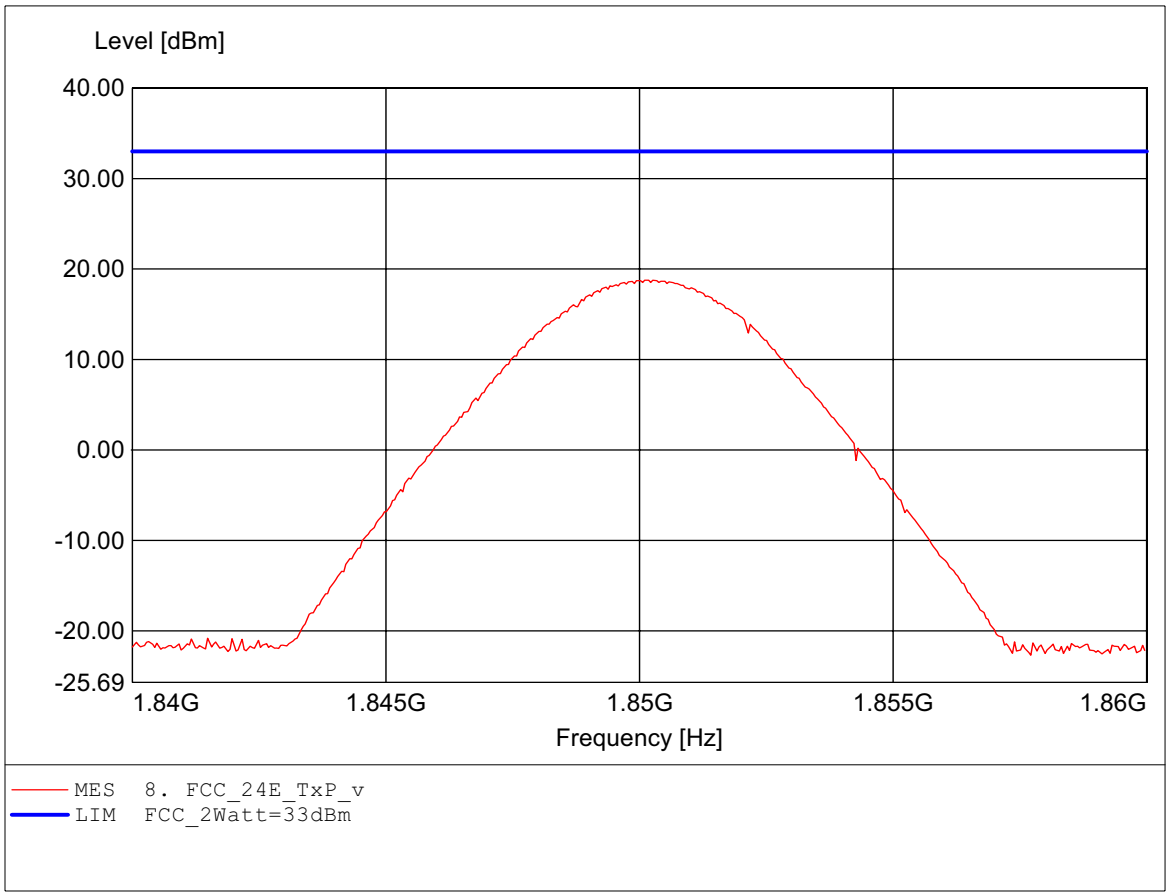
Order Number :	W6M20610-7519	ch512
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to §24.232	
Comment 1:	Dist.: 3m, Ant.: HL025,PCL 0	
	Freq: 1.850GHz, Pmax: 30.19dBm, RBW: 3MHz	



Equivalent Isotropically Radiated Power

FCC RULES PART 24 SUBPART E

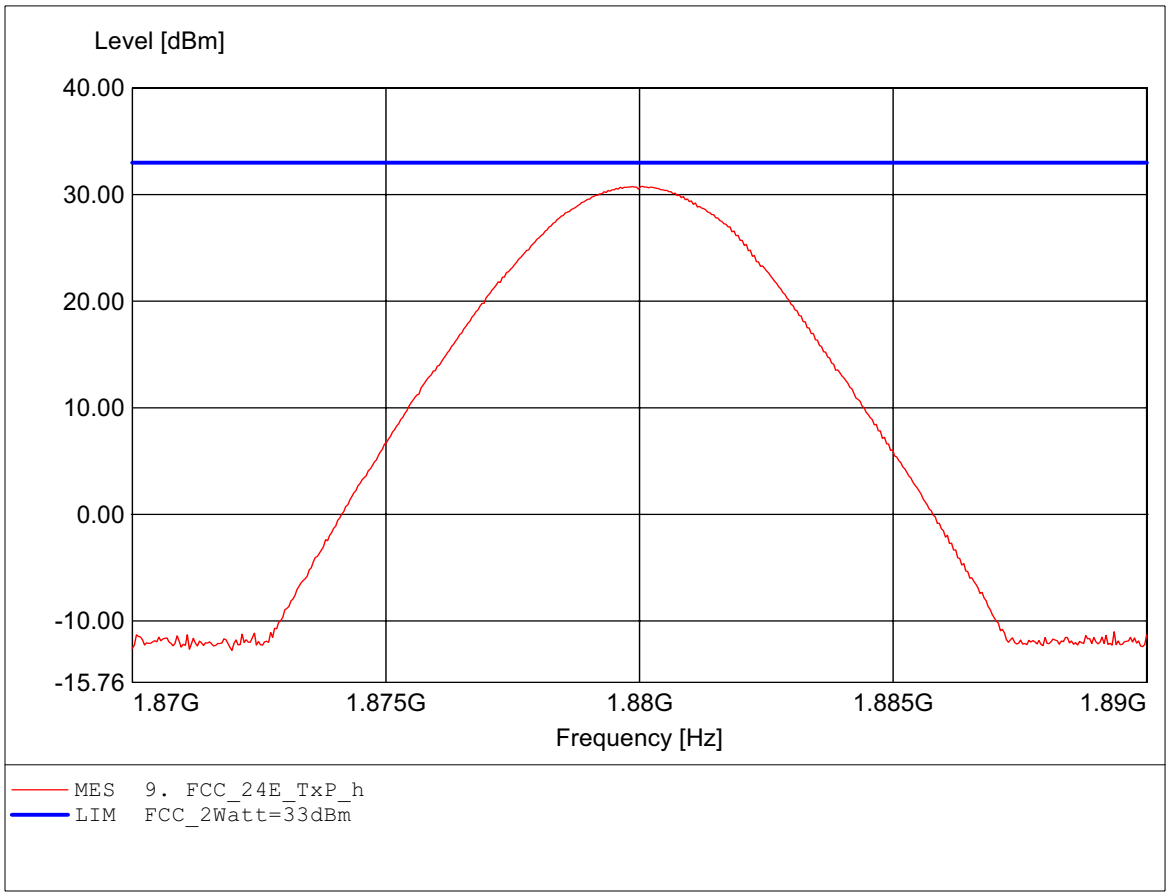
```
Order Number :        W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to §24.232
Comment 1:            Dist.: 3m, Ant.: HL025,PCL 0
                      Freq: 1.850GHz, Pmax: 18.76dBm, RBW: 3MHz
```



Equivalent Isotropically Radiated Power

FCC RULES PART 24 SUBPART E

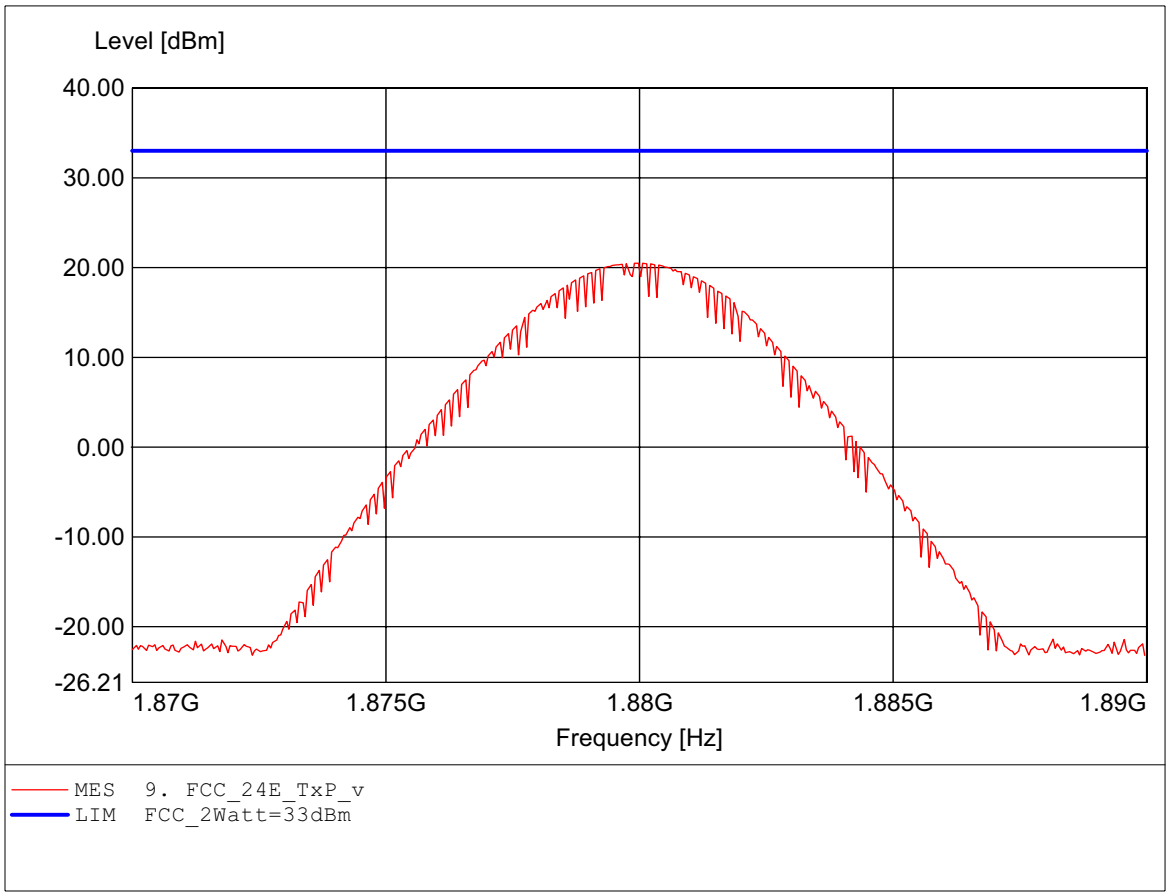
Order Number :	W6M20610-7519	ch661
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to §24.232	
Comment 1:	Dist.: 3m, Ant.: HL025,PCL 0	
	Freq: 1.880GHz, Pmax: 30.77dBm, RBW: 3MHz	



Equivalent Isotropically Radiated Power

FCC RULES PART 24 SUBPART E

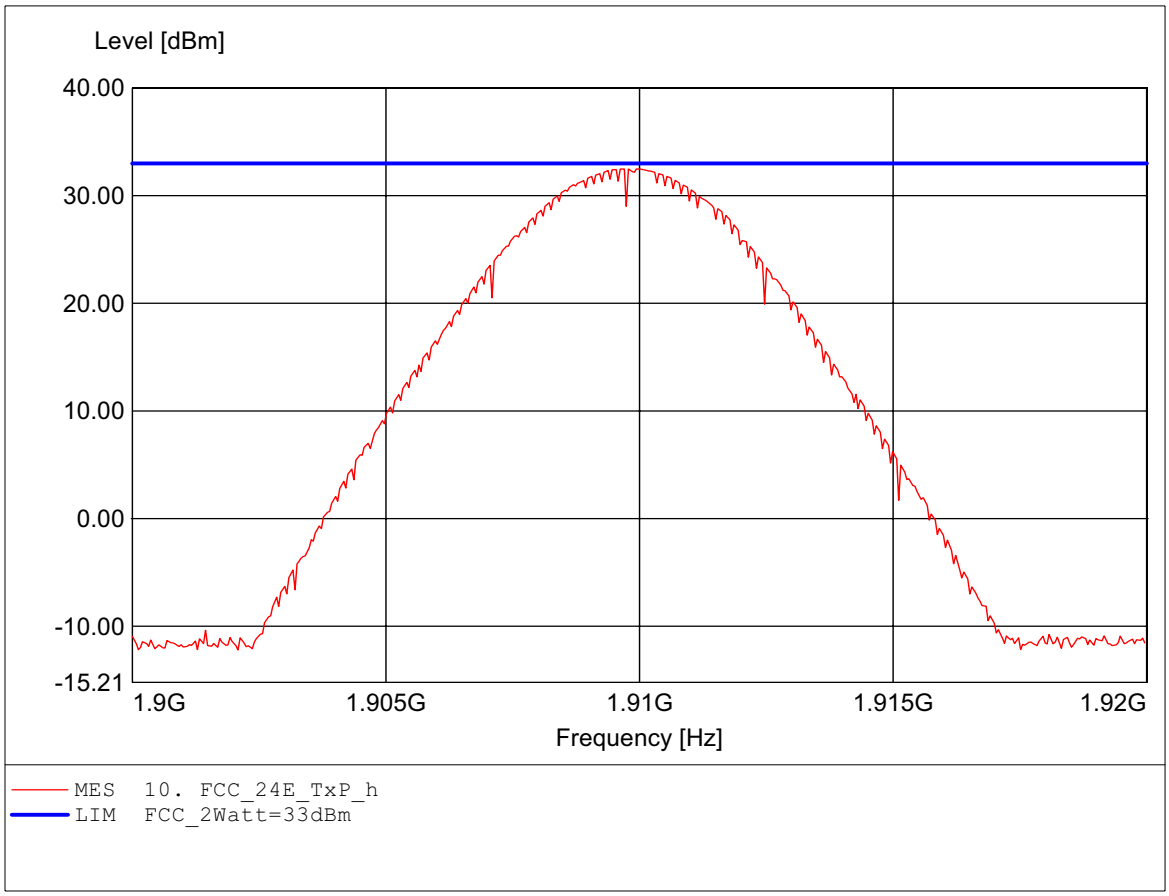
Order Number :	W6M20610-7519	ch661
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to §24.232	
Comment 1:	Dist.: 3m, Ant.: HL025,PCL 0	
	Freq: 1.880GHz, Pmax: 20.49dBm, RBW: 3MHz	



Equivalent Isotropically Radiated Power

FCC RULES PART 24 SUBPART E

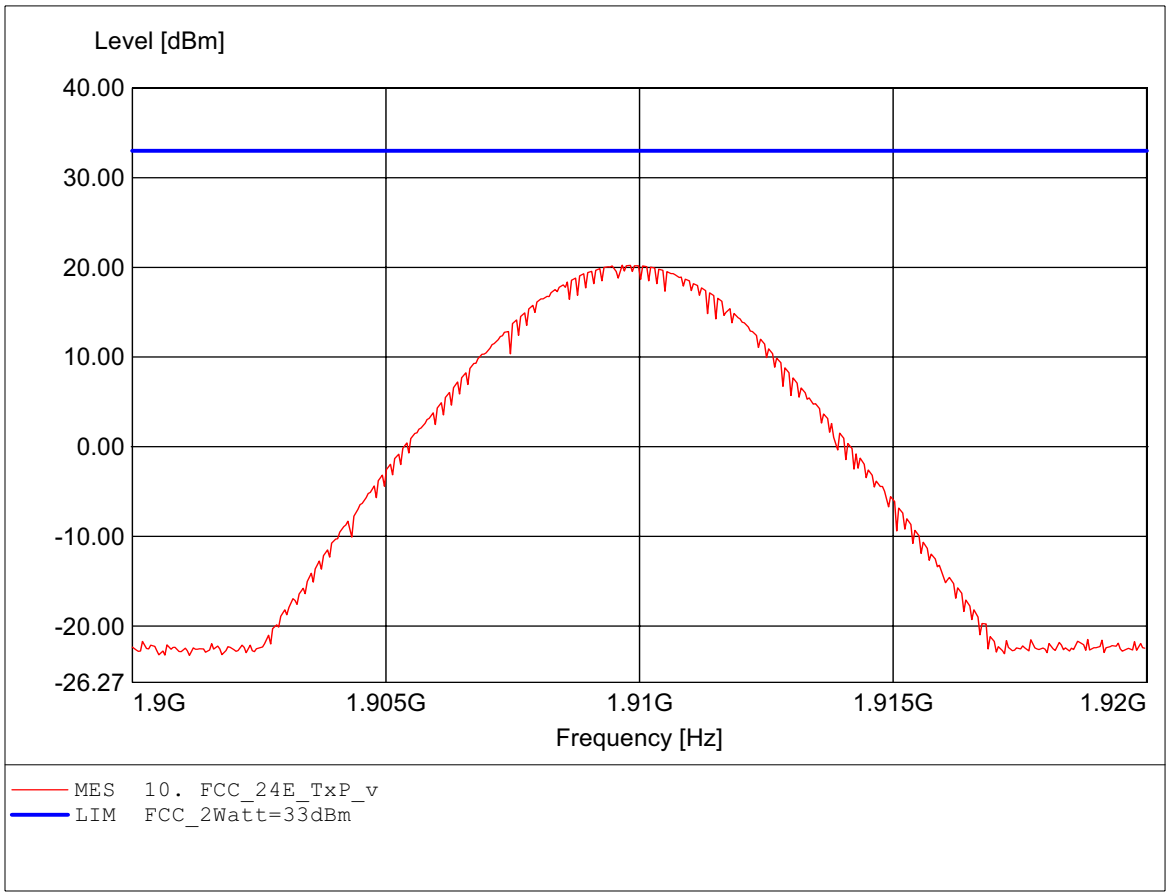
Order Number :	W6M20610-7519	ch810
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to §24.232	
Comment 1:	Dist.: 3m, Ant.: HL025,PCL 0	
	Freq: 1.910GHz, Pmax: 32.48dBm, RBW: 3MHz	



Equivalent Isotropically Radiated Power

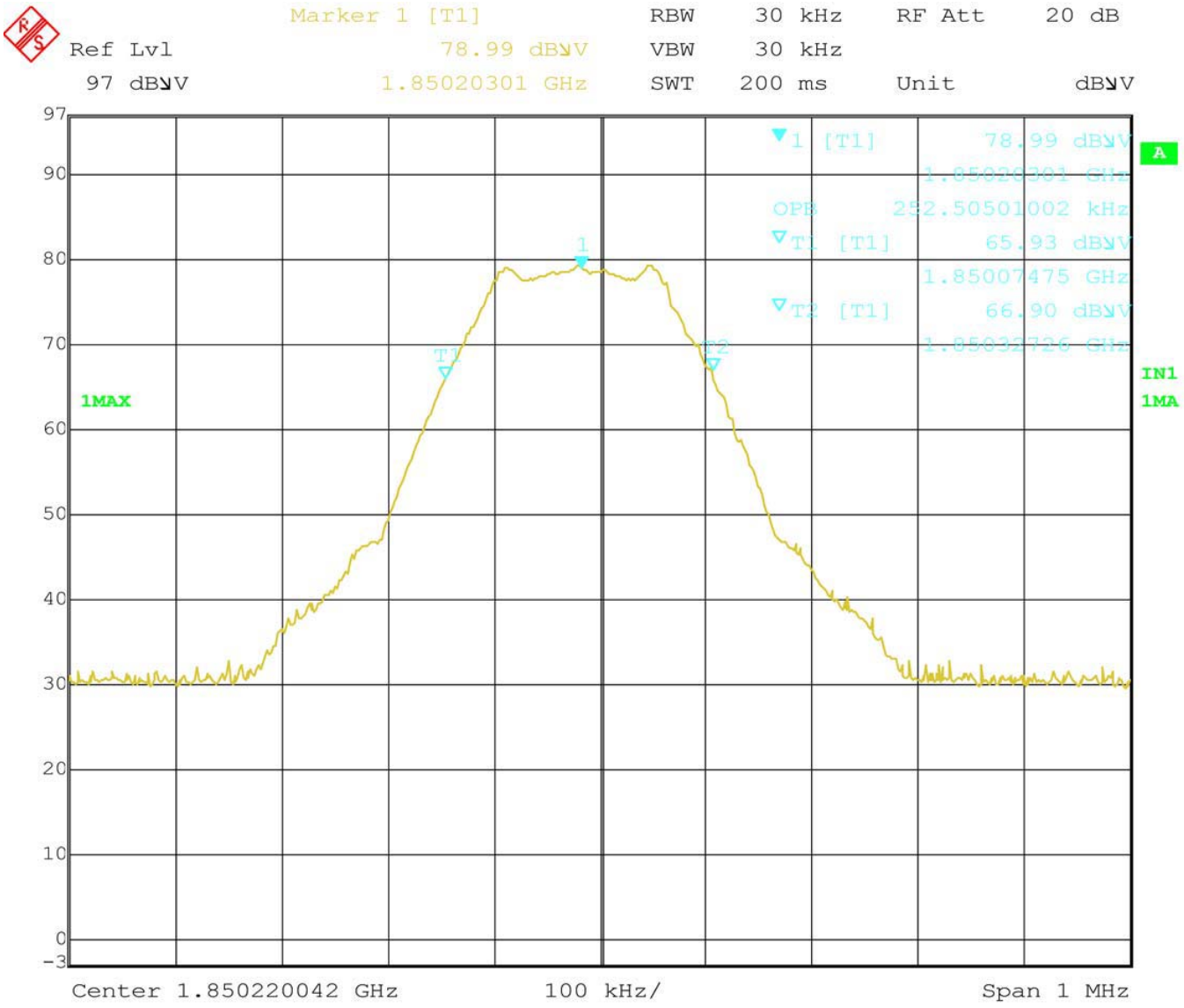
FCC RULES PART 24 SUBPART E

Order Number :	W6M20610-7519	ch810
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to §24.232	
Comment 1:	Dist.: 3m, Ant.: HL025,PCL 0	
	Freq: 1.910GHz, Pmax: 20.24dBm, RBW: 3MHz	

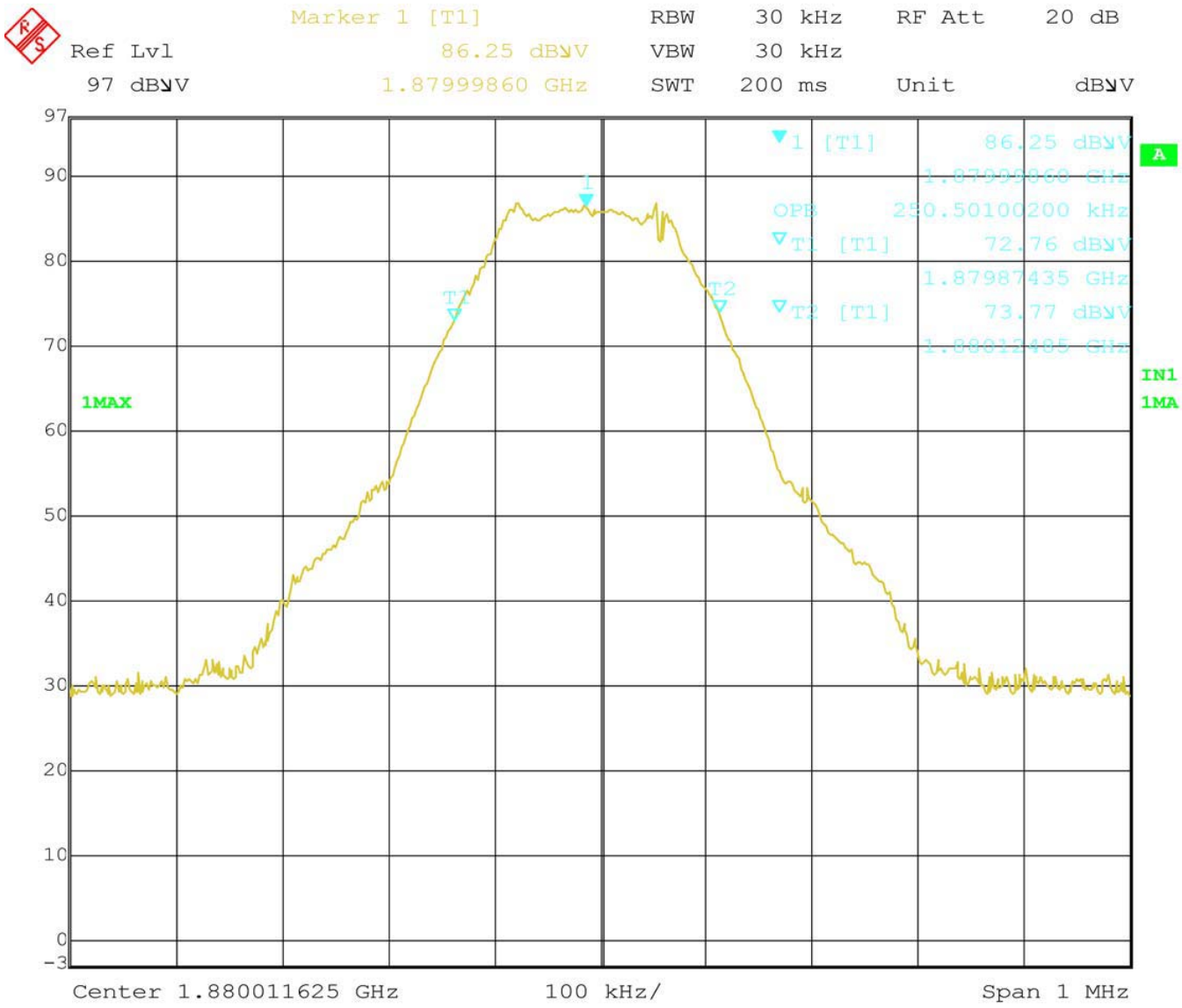


Appendix B

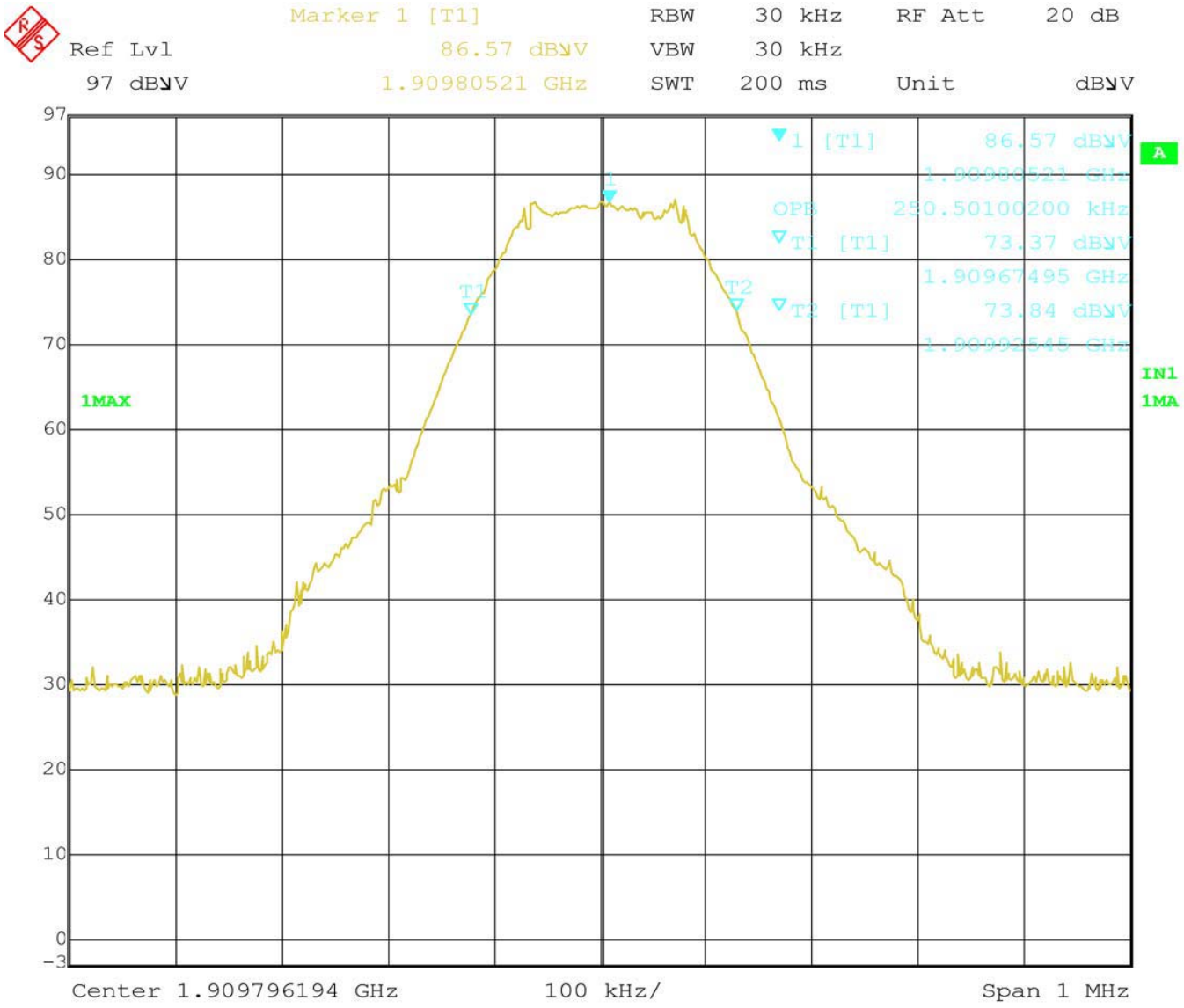
Occupied Bandwidth / Emission Mask



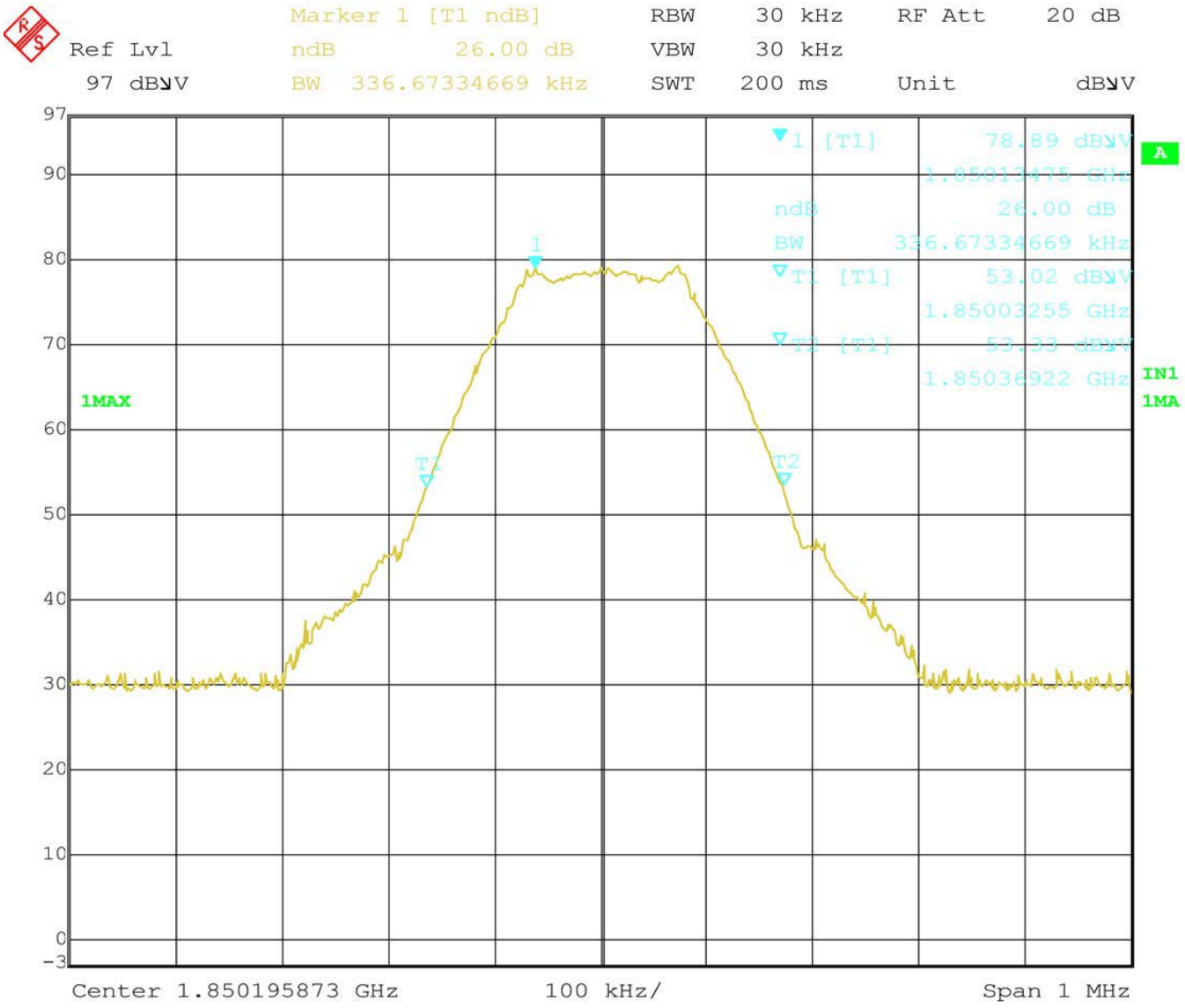
Title: Occupied bandwidth ch512
Date: 28.NOV.2006 10:59:29



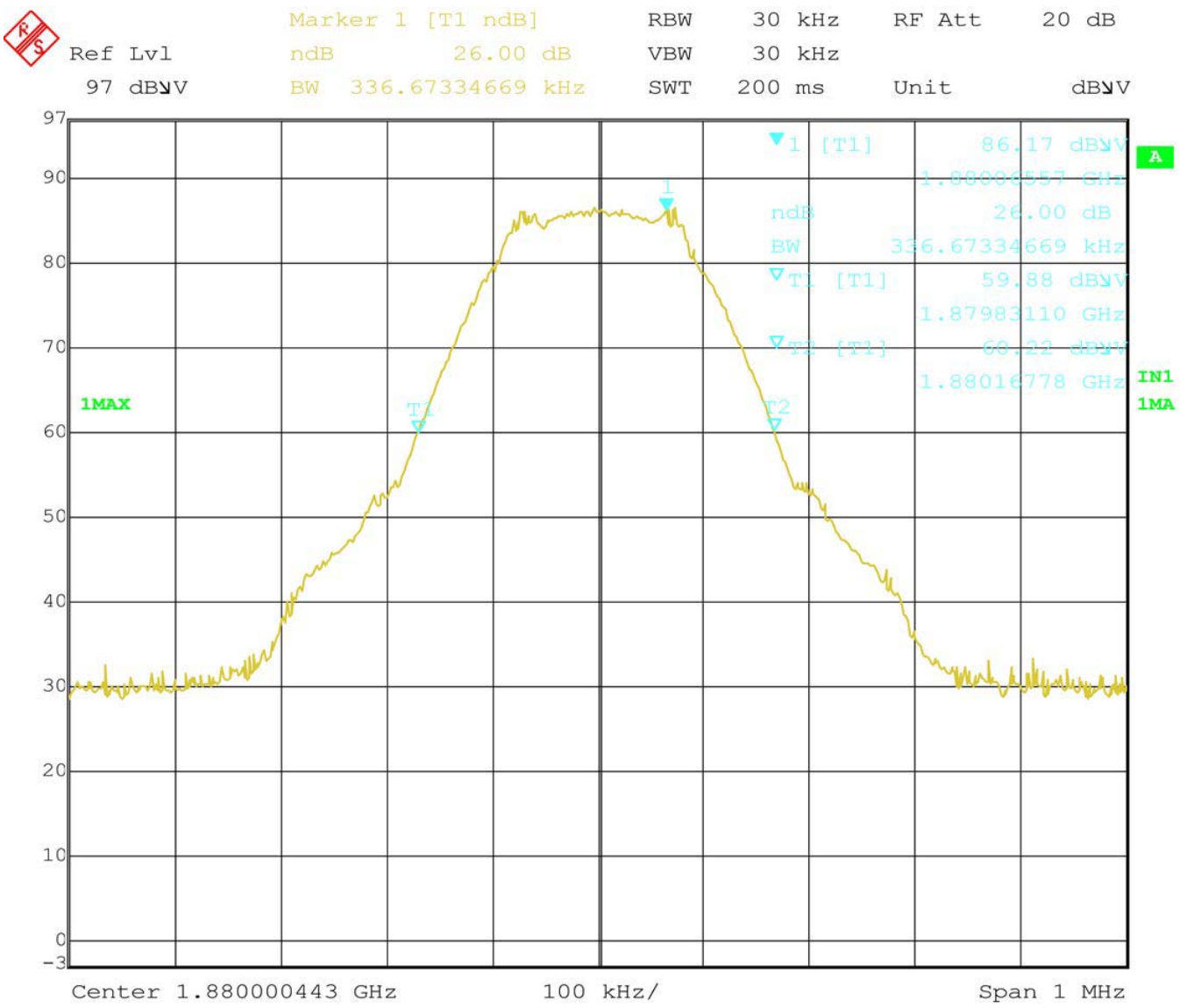
Title: Occupied bandwidth ch661
Date: 28.NOV.2006 11:00:38



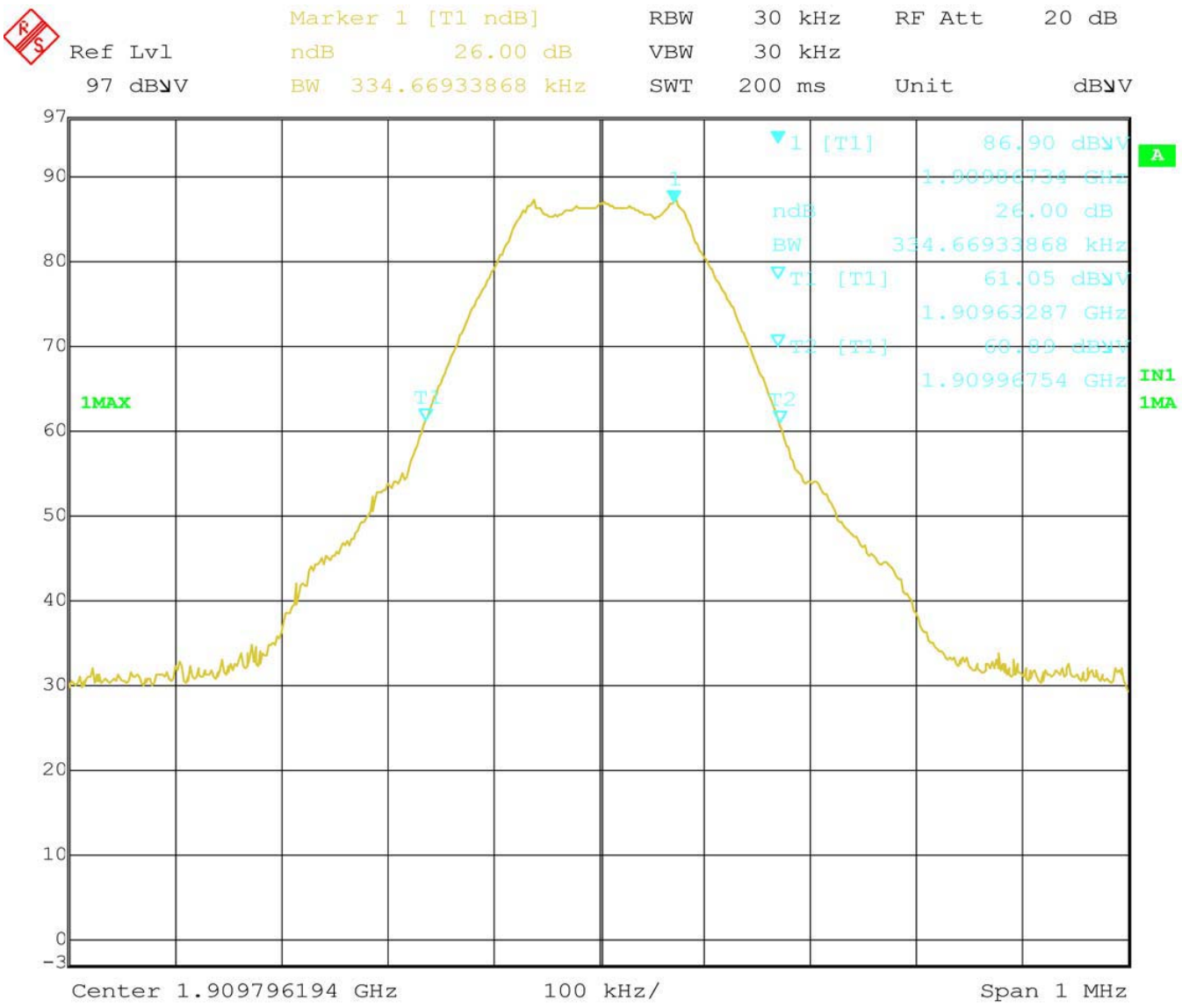
Title: Occupied bandwidth ch810
Date: 28.NOV.2006 11:01:36



Title: -26dB bandwidth ch512
Date: 28.NOV.2006 11:05:14



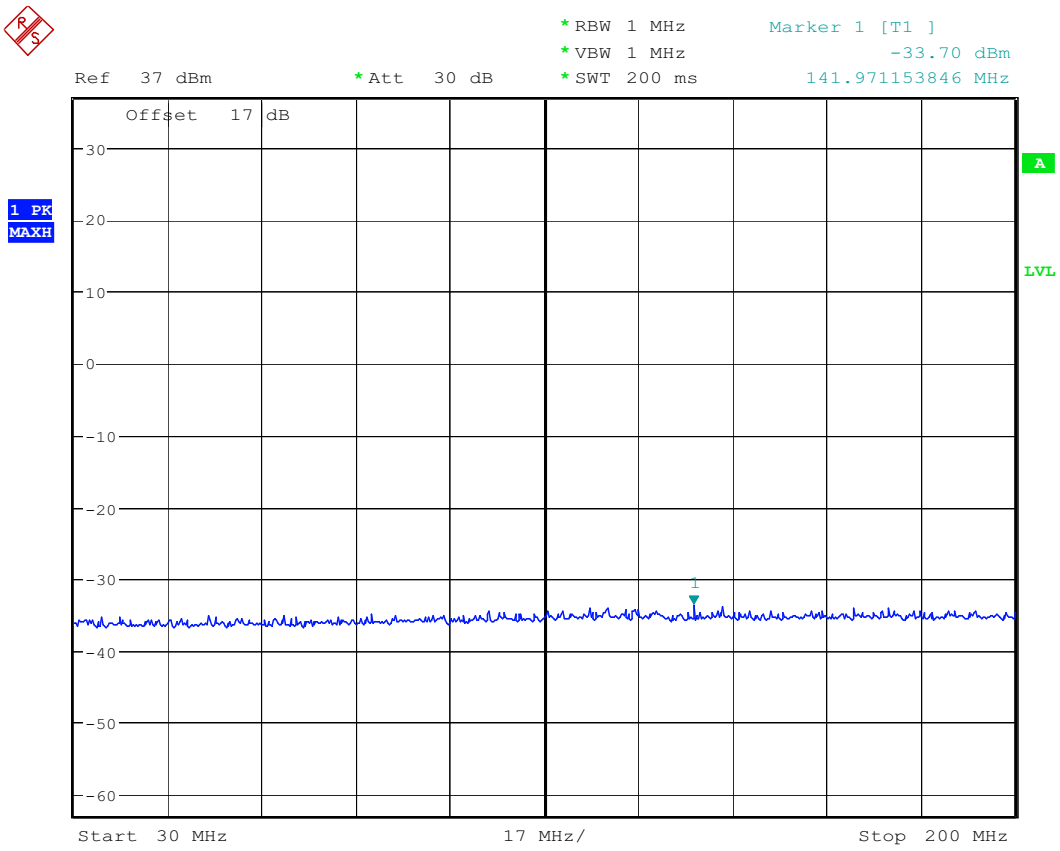
Title: -26dB bandwidth ch661
Date: 28.NOV.2006 11:04:13



Title: -26dB bandwidth ch810
Date: 28.NOV.2006 11:03:12

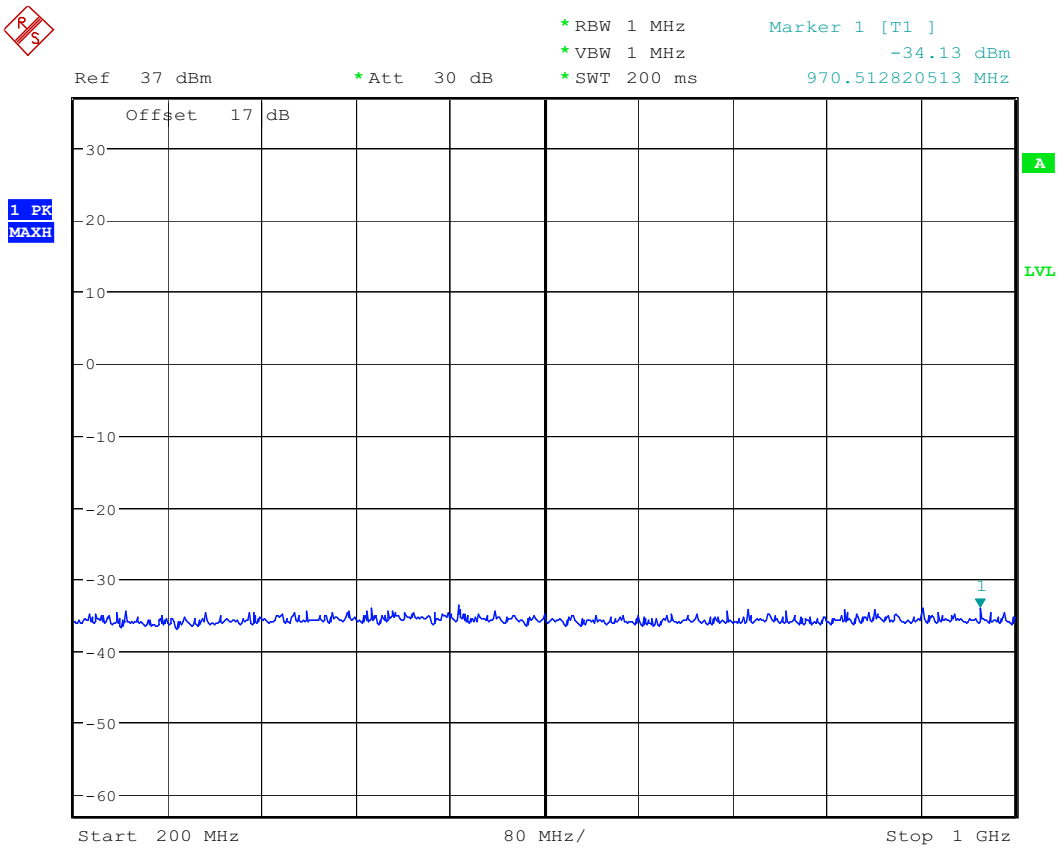
Appendix C

Spurious Emissions at Antenna Terminals



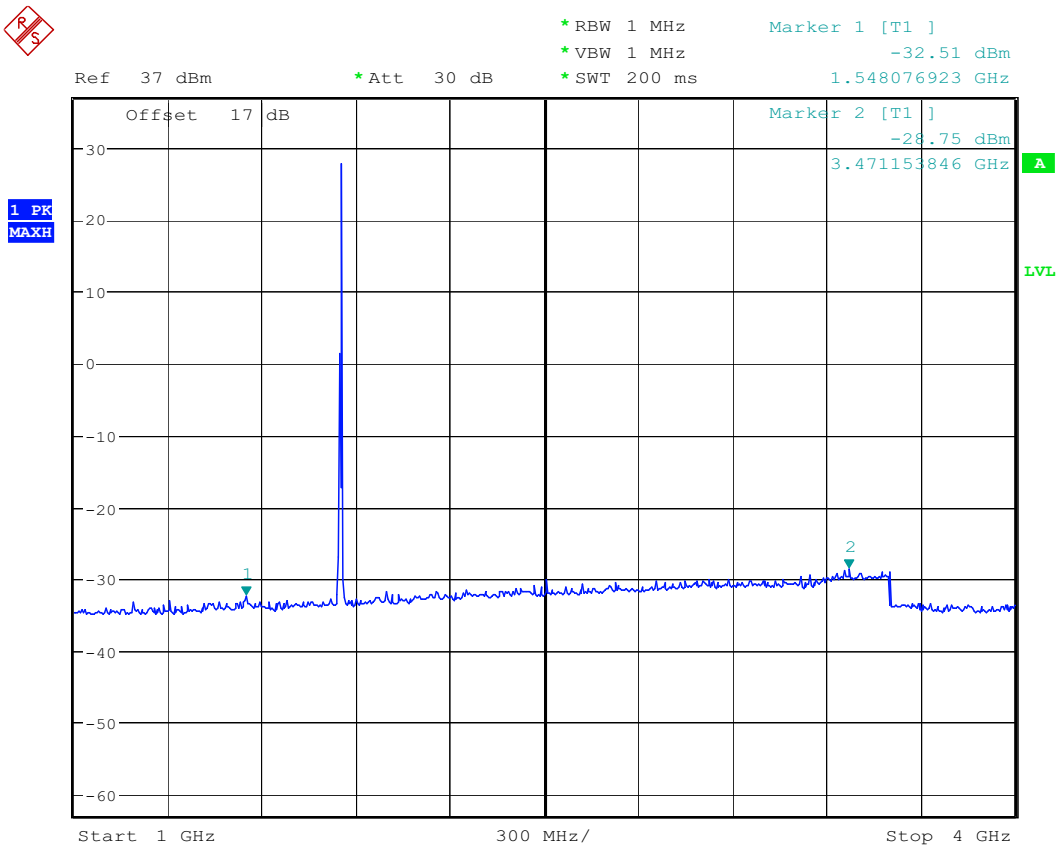
CONDUCTED SPURIOUS EMISSION GSM 1900 CH512

Date: 1.DEC.2006 12:43:30



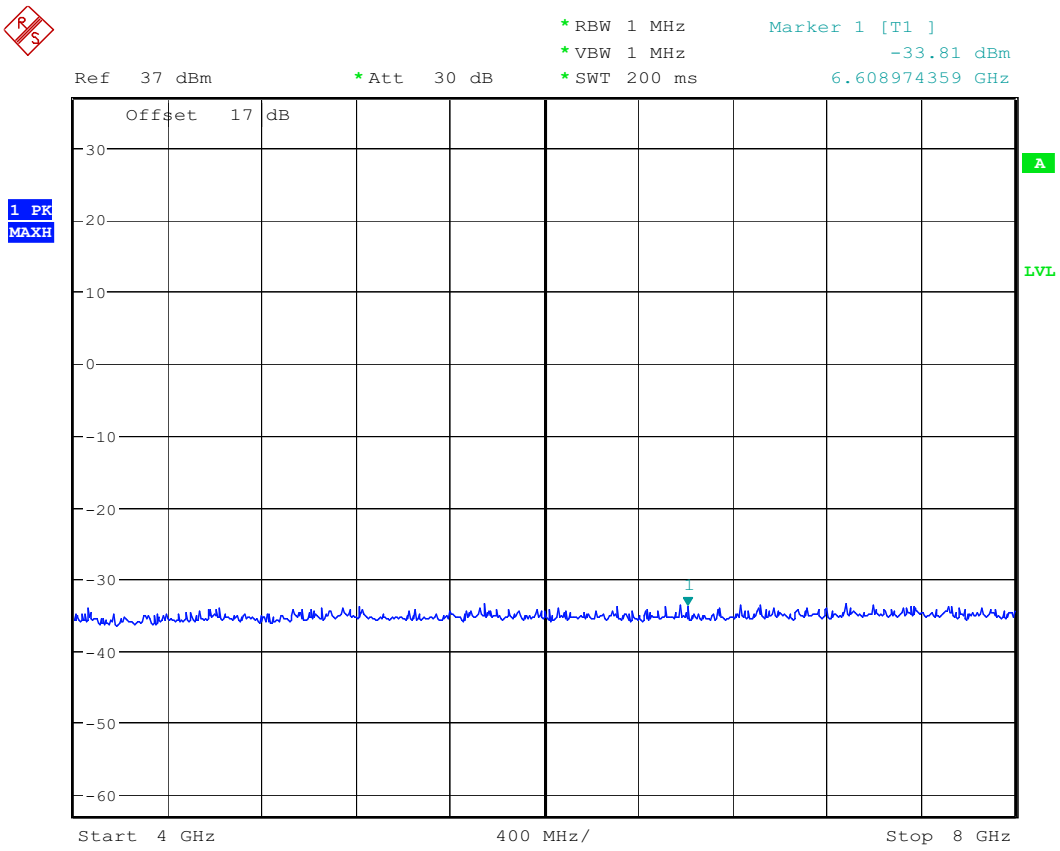
CONDUCTED SPURIOUS EMISSION GSM 1900 CH512

Date: 1.DEC.2006 12:43:53



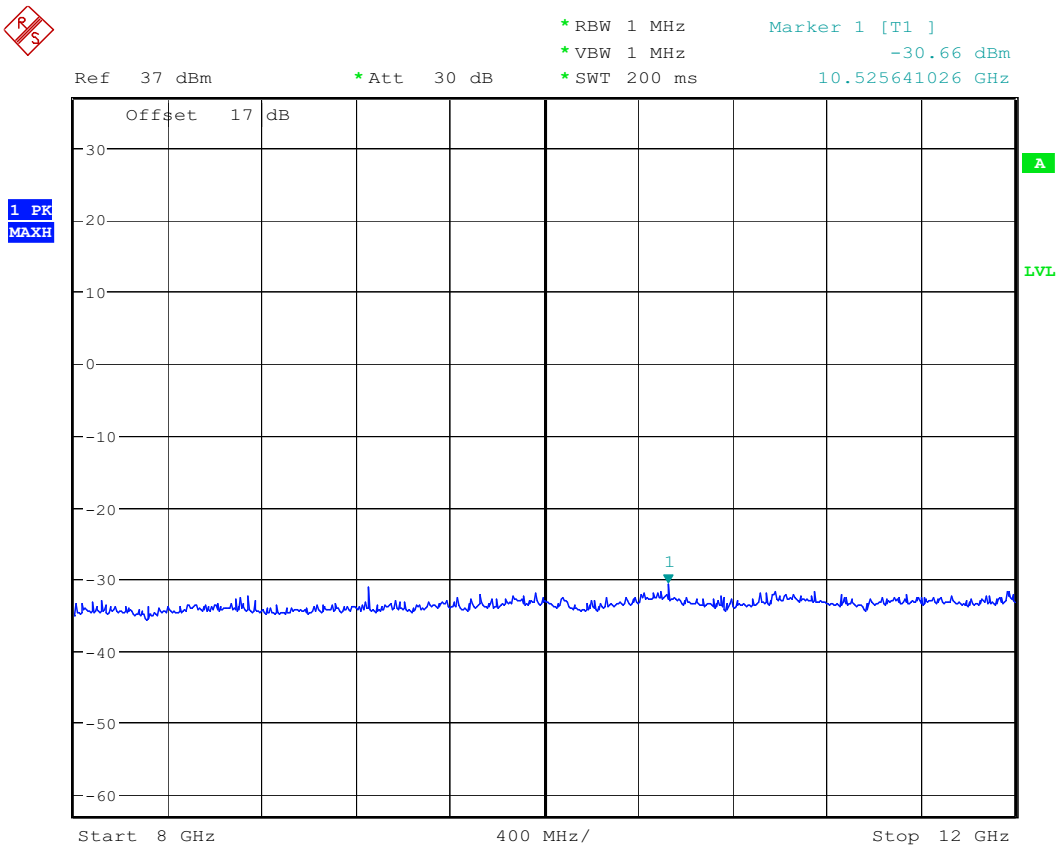
CONDUCTED SPURIOUS EMISSION GSM 1900 CH512

Date: 1.DEC.2006 12:51:03



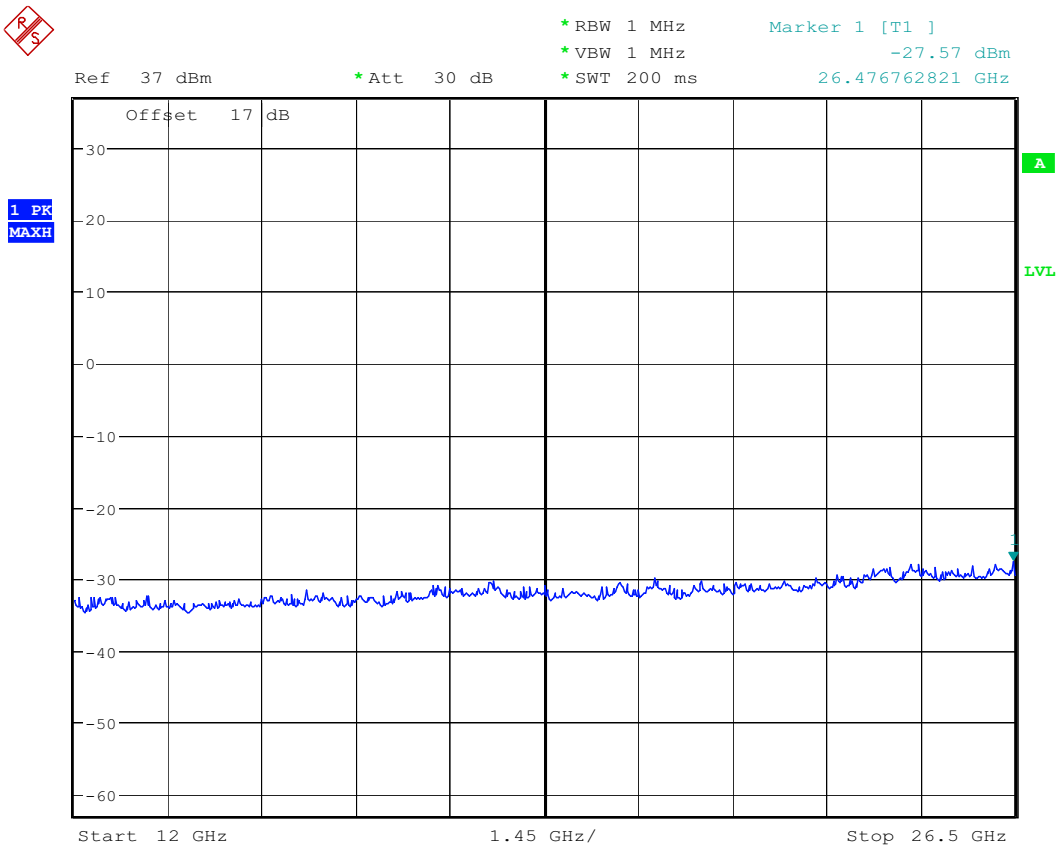
CONDUCTED SPURIOUS EMISSION GSM 1900 CH512

Date: 1.DEC.2006 12:51:30



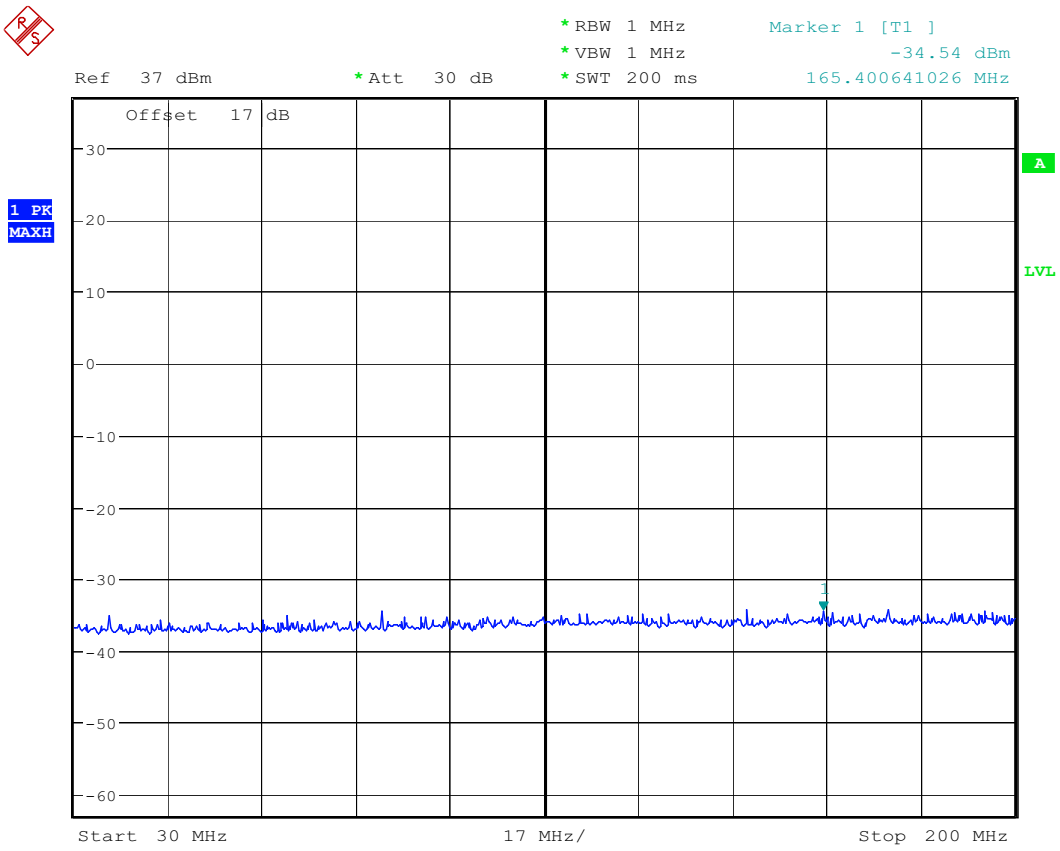
CONDUCTED SPURIOUS EMISSION GSM 1900 CH512

Date: 1.DEC.2006 12:52:12



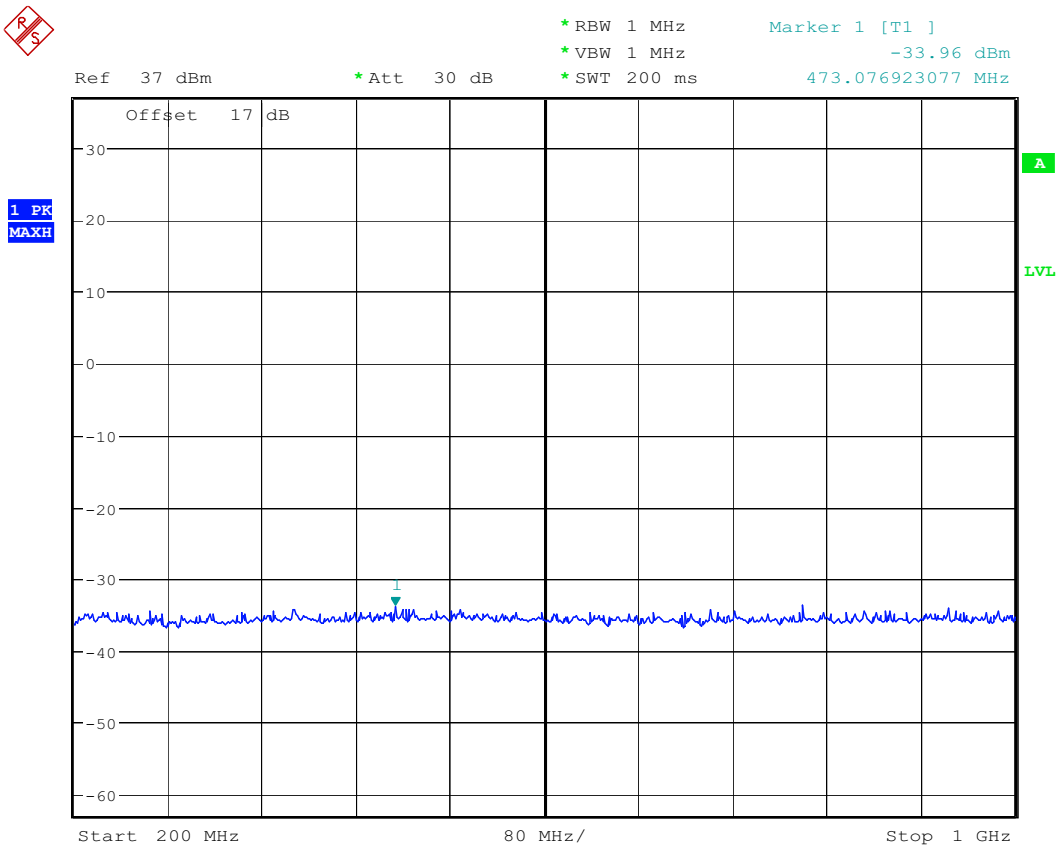
CONDUCTED SPURIOUS EMISSION GSM 1900 CH512

Date: 1.DEC.2006 12:52:45



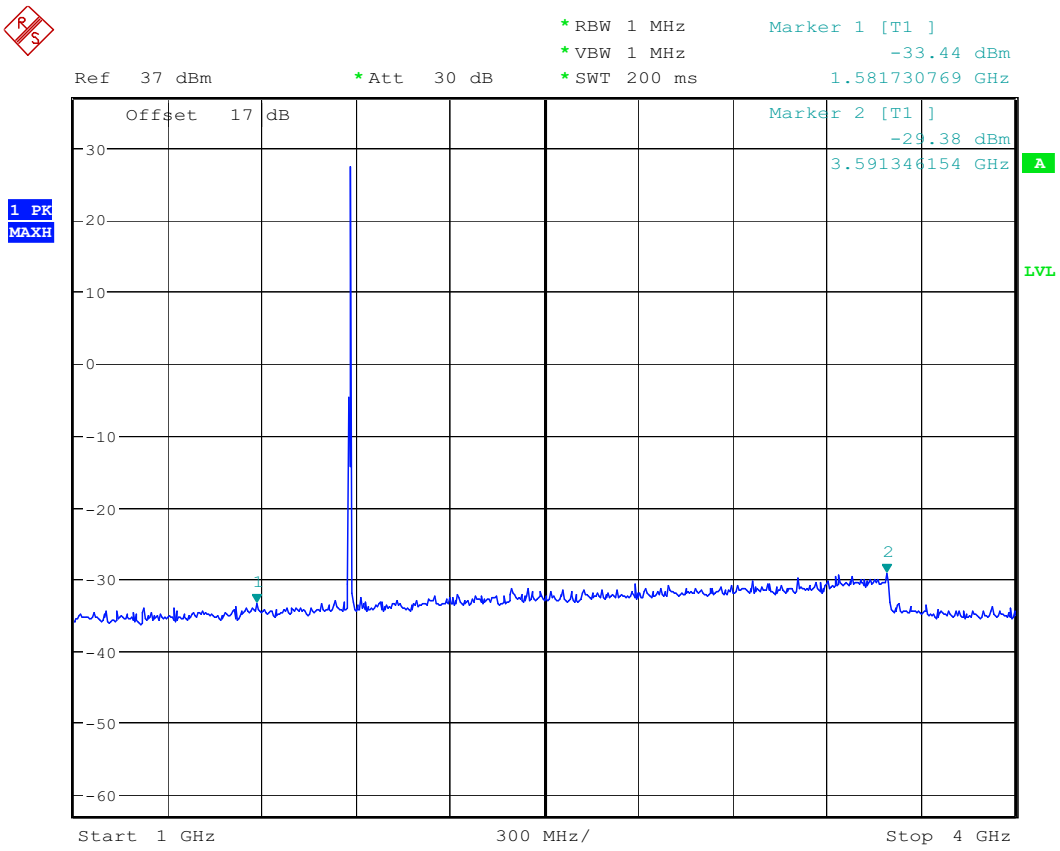
CONDUCTED SPURIOUS EMISSION GSM 1900 CH661

Date: 1.DEC.2006 12:59:41



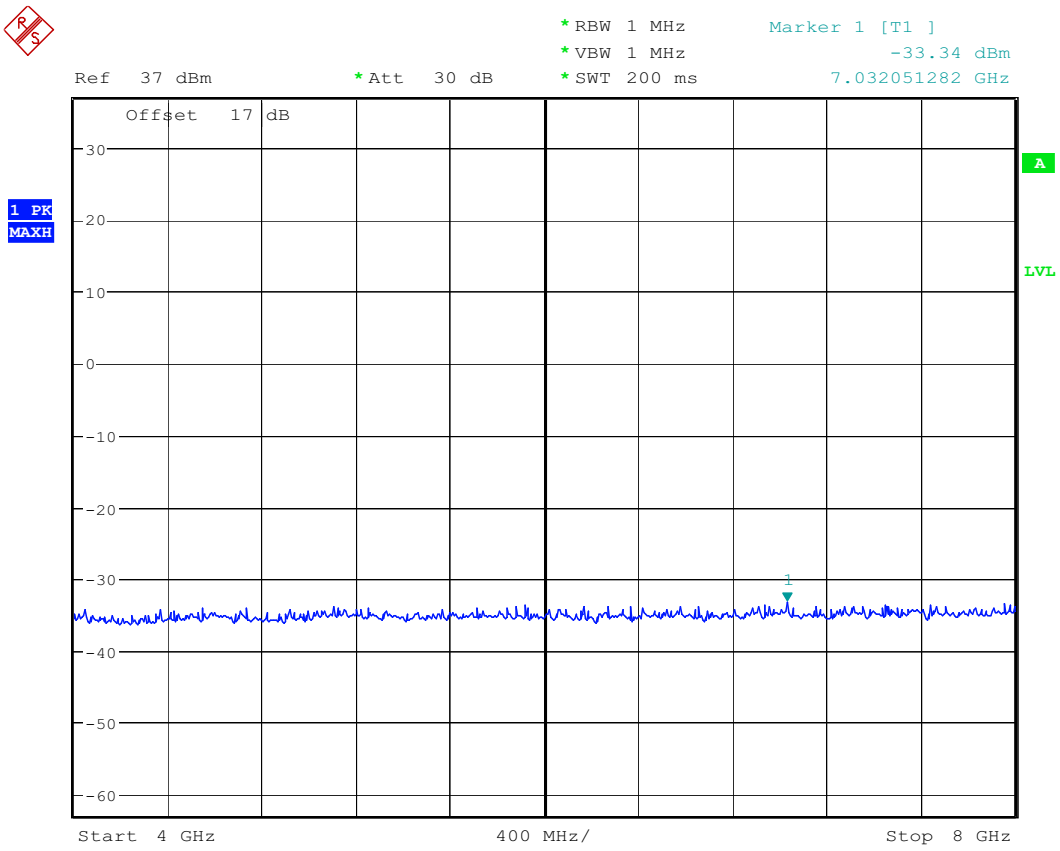
CONDUCTED SPURIOUS EMISSION GSM 1900 CH661

Date: 1.DEC.2006 13:00:09



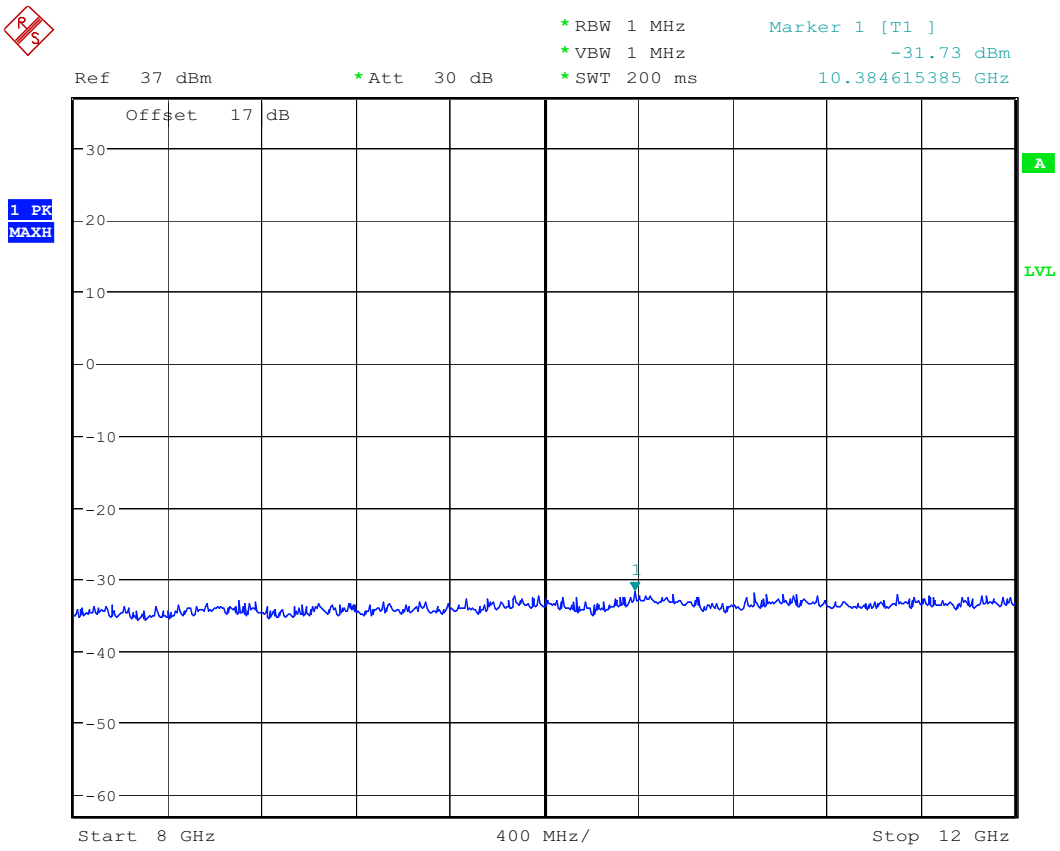
CONDUCTED SPURIOUS EMISSION GSM 1900 CH661

Date: 1.DEC.2006 13:00:57



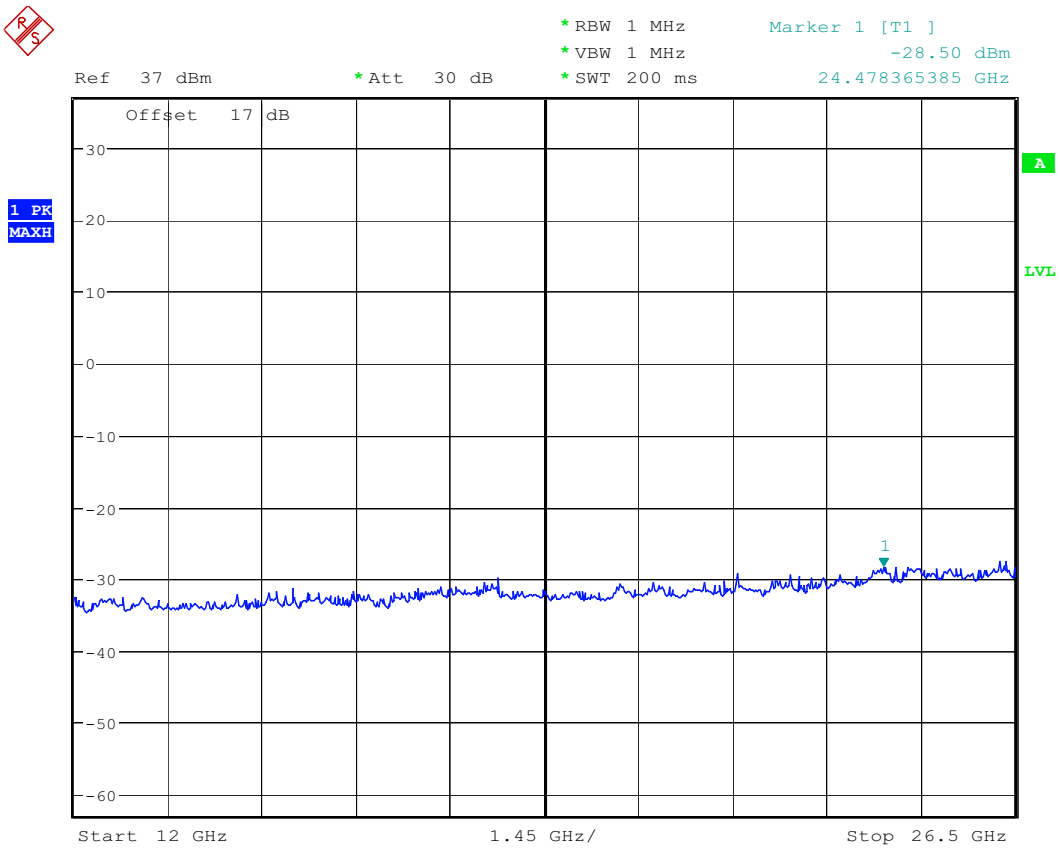
CONDUCTED SPURIOUS EMISSION GSM 1900 CH661

Date: 1.DEC.2006 13:01:49



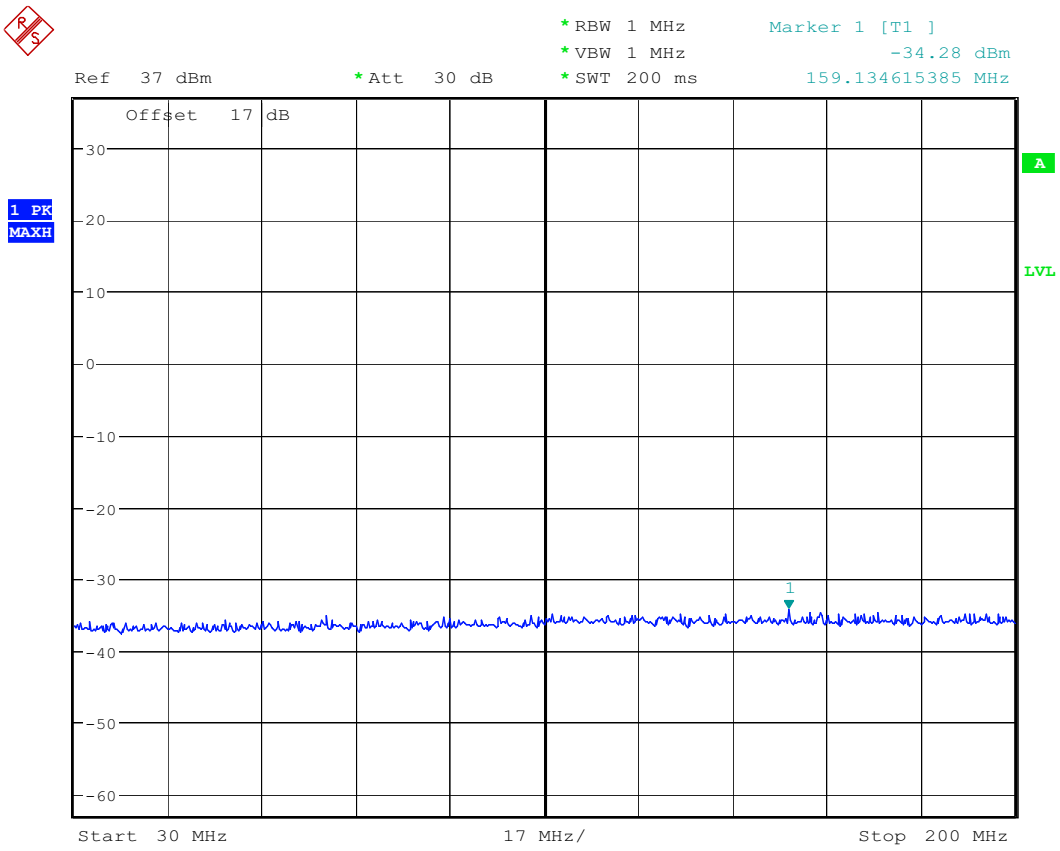
CONDUCTED SPURIOUS EMISSION GSM 1900 CH661

Date: 1.DEC.2006 13:02:19



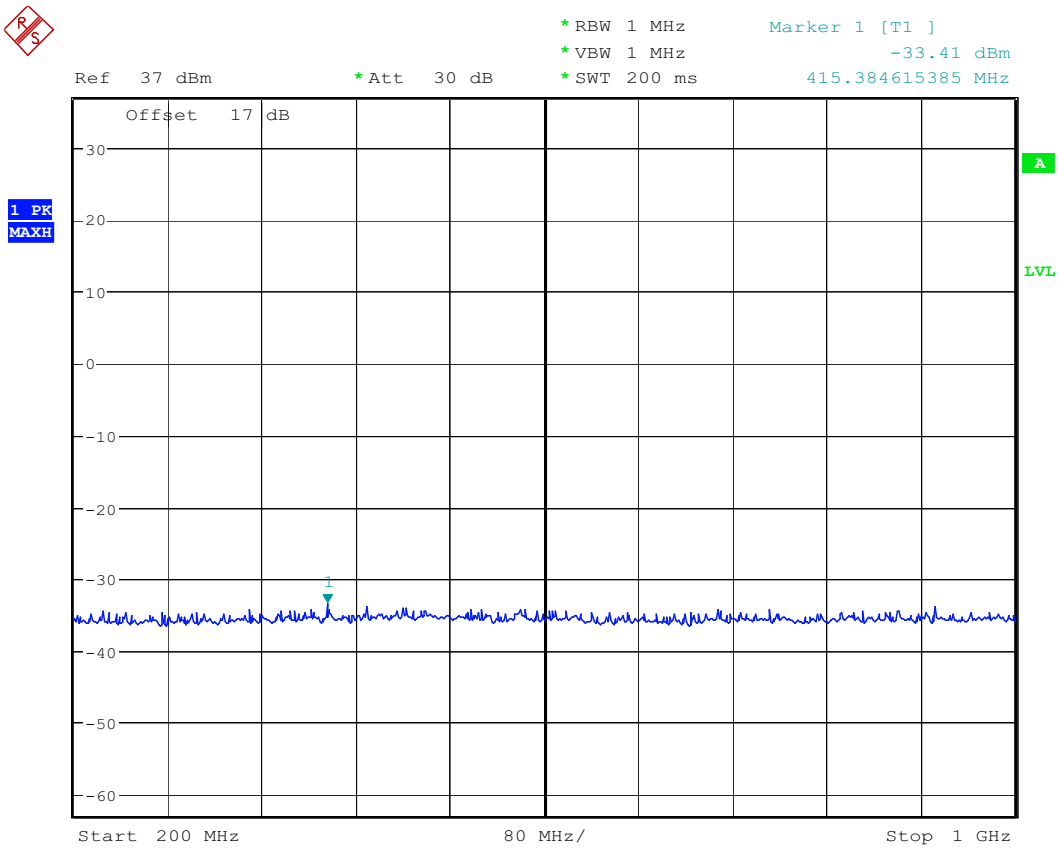
CONDUCTED SPURIOUS EMISSION GSM 1900 CH661

Date: 1.DEC.2006 13:02:46



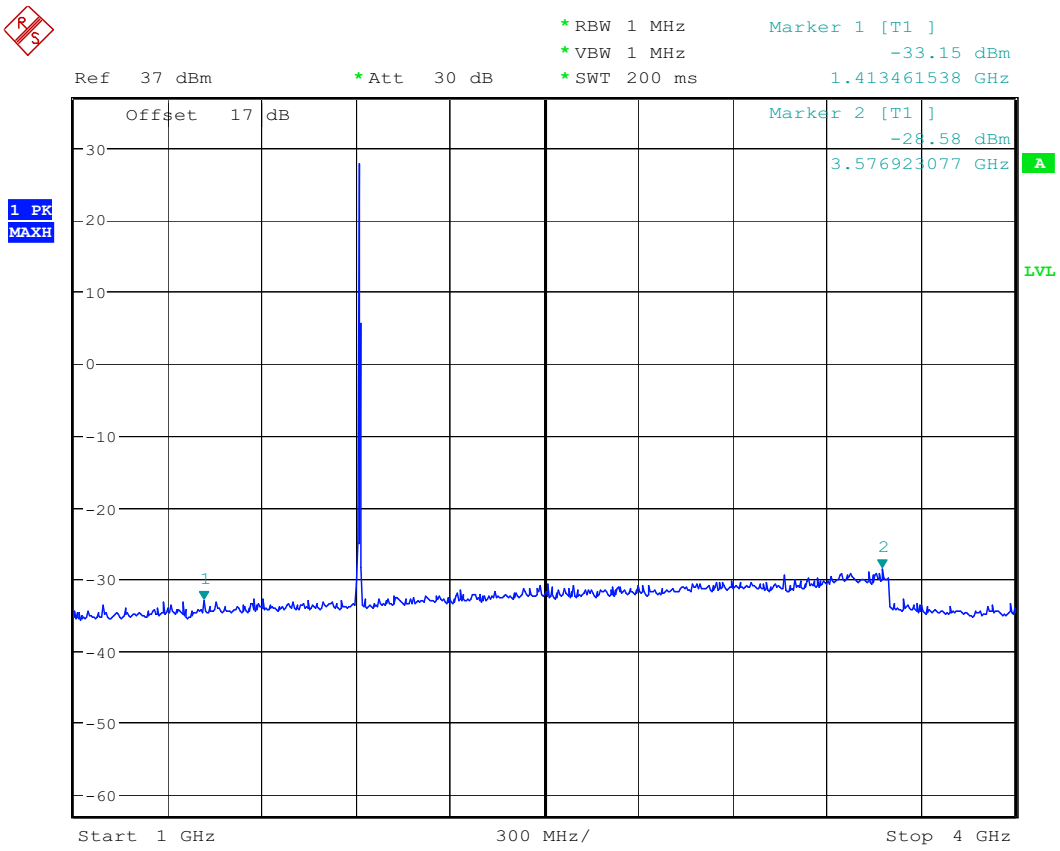
CONDUCTED SPURIOUS EMISSION GSM 1900 CH810

Date: 1.DEC.2006 13:03:36



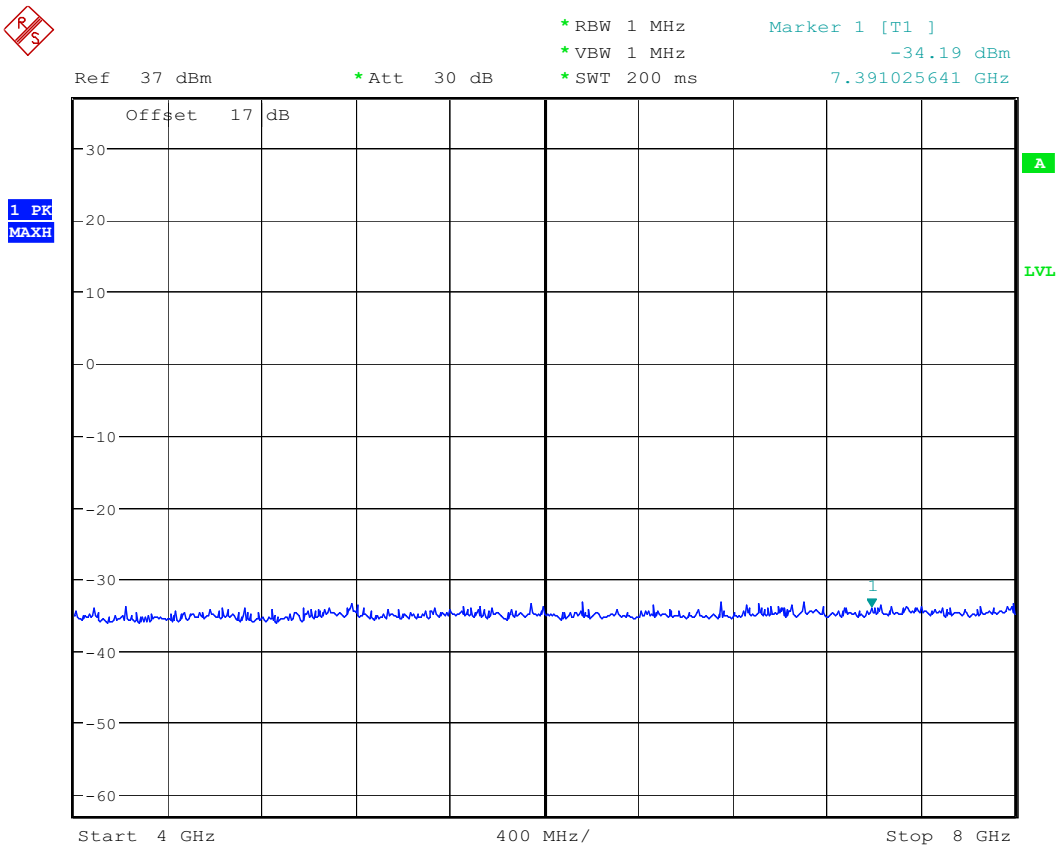
CONDUCTED SPURIOUS EMISSION GSM 1900 CH810

Date: 1.DEC.2006 13:04:04



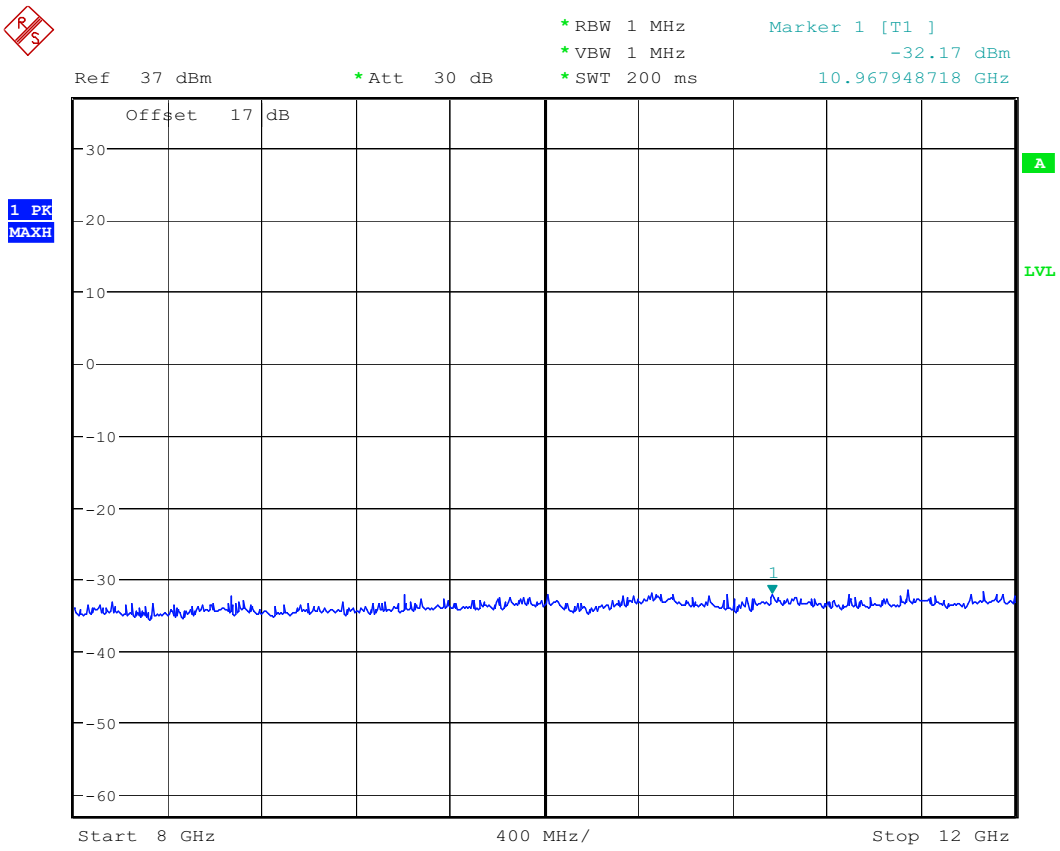
CONDUCTED SPURIOUS EMISSION GSM 1900 CH810

Date: 1.DEC.2006 13:06:18



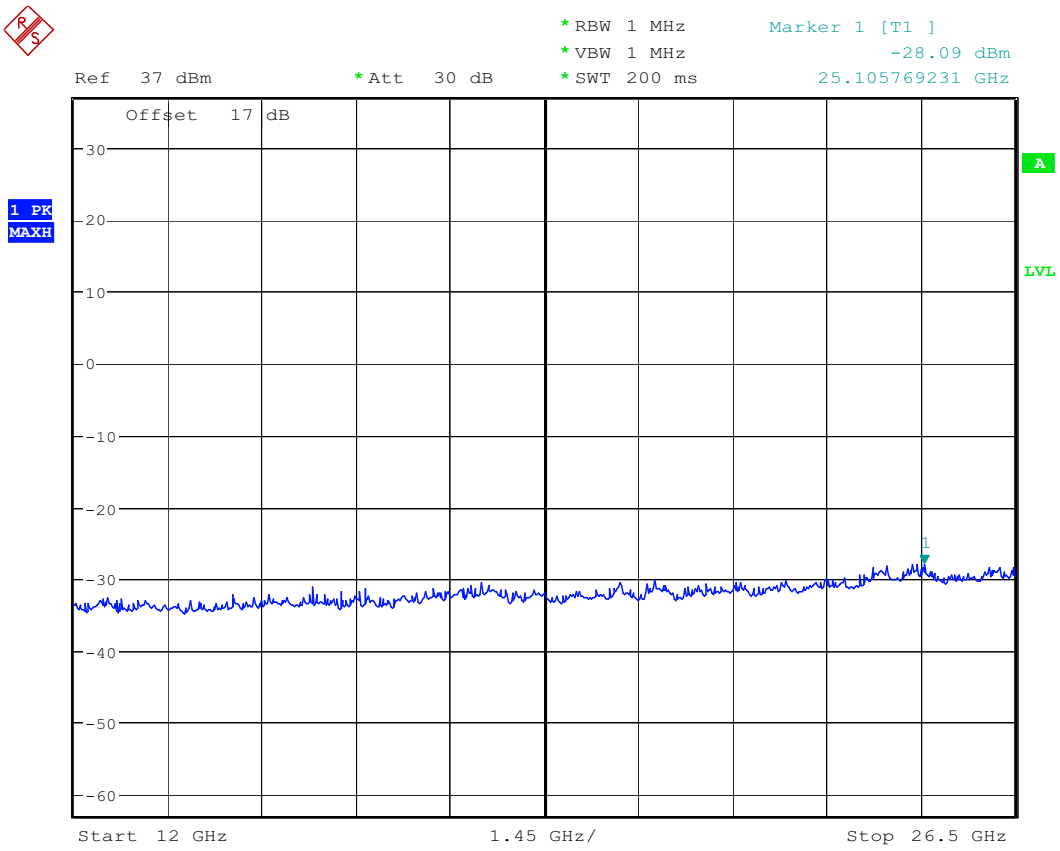
CONDUCTED SPURIOUS EMISSION GSM 1900 CH810

Date: 1.DEC.2006 13:07:08



CONDUCTED SPURIOUS EMISSION GSM 1900 CH810

Date: 1.DEC.2006 13:07:38



CONDUCTED SPURIOUS EMISSION GSM 1900 CH810

Date: 1.DEC.2006 13:08:01

Appendix D

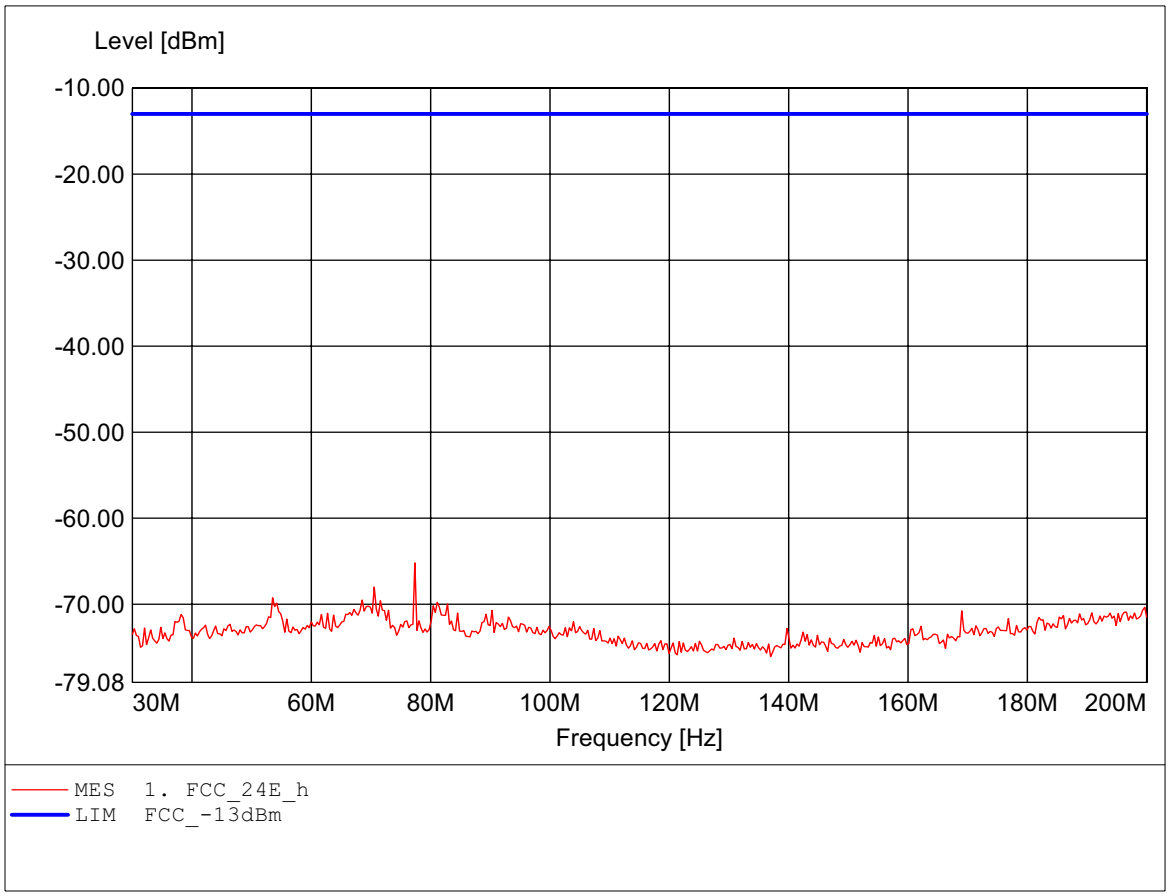
Filed Strength of Spurious Emission

The measurement diagrams plots attached below are preliminary wideband scan with a peak detector and for reference only. The final test results are listed on page 16 to 17.

Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

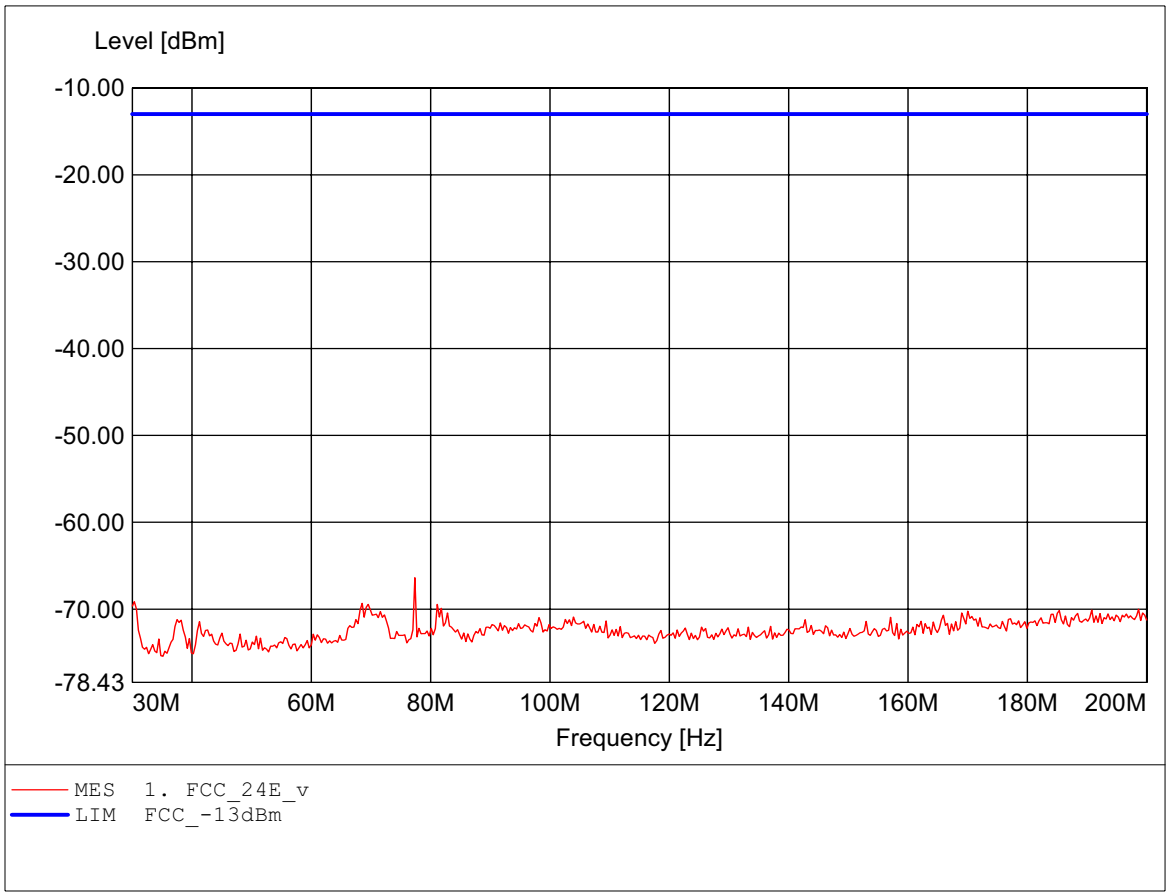
Order Number :	W6M20610-7519	ch512
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HK 116	
	Freq: 77.355MHz, Pmax: -65.18dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

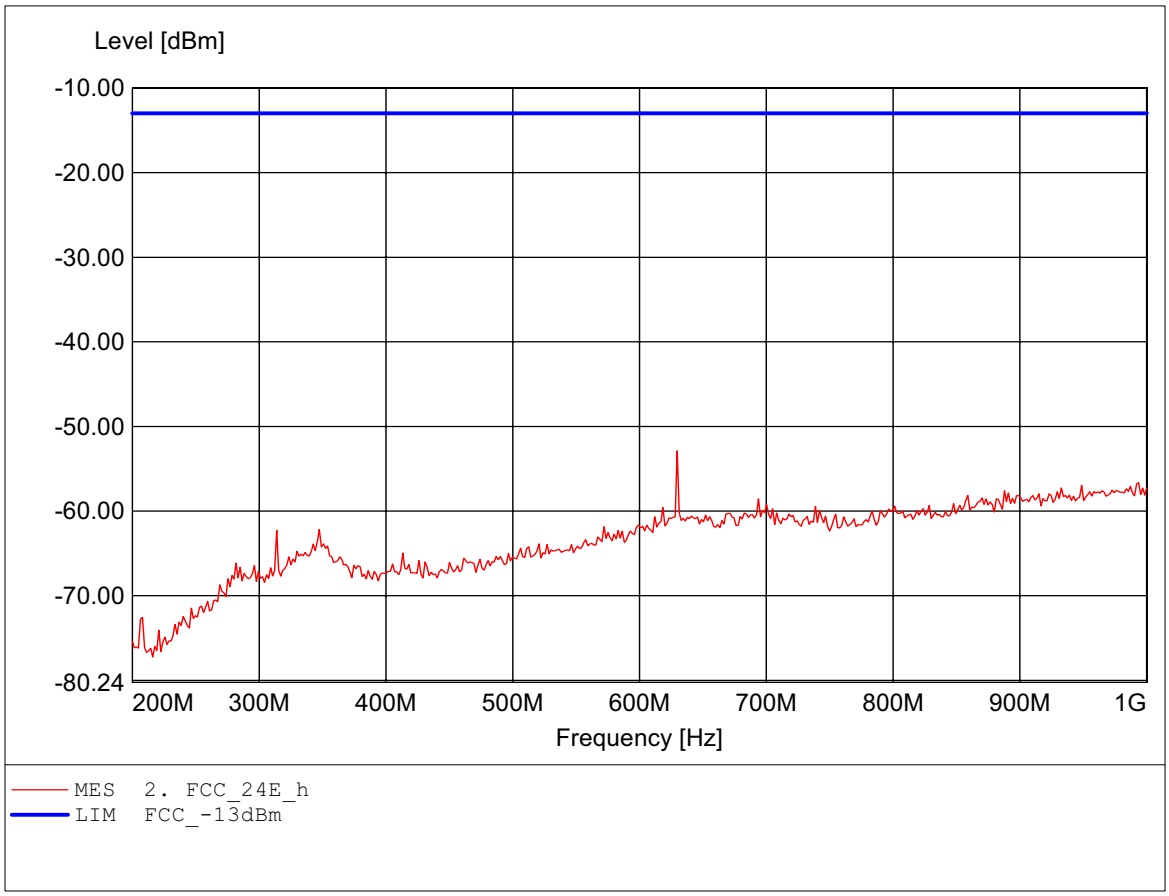
```
Order Number :         W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HK 116
                      Freq: 77.355MHz, Pmax: -66.39dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

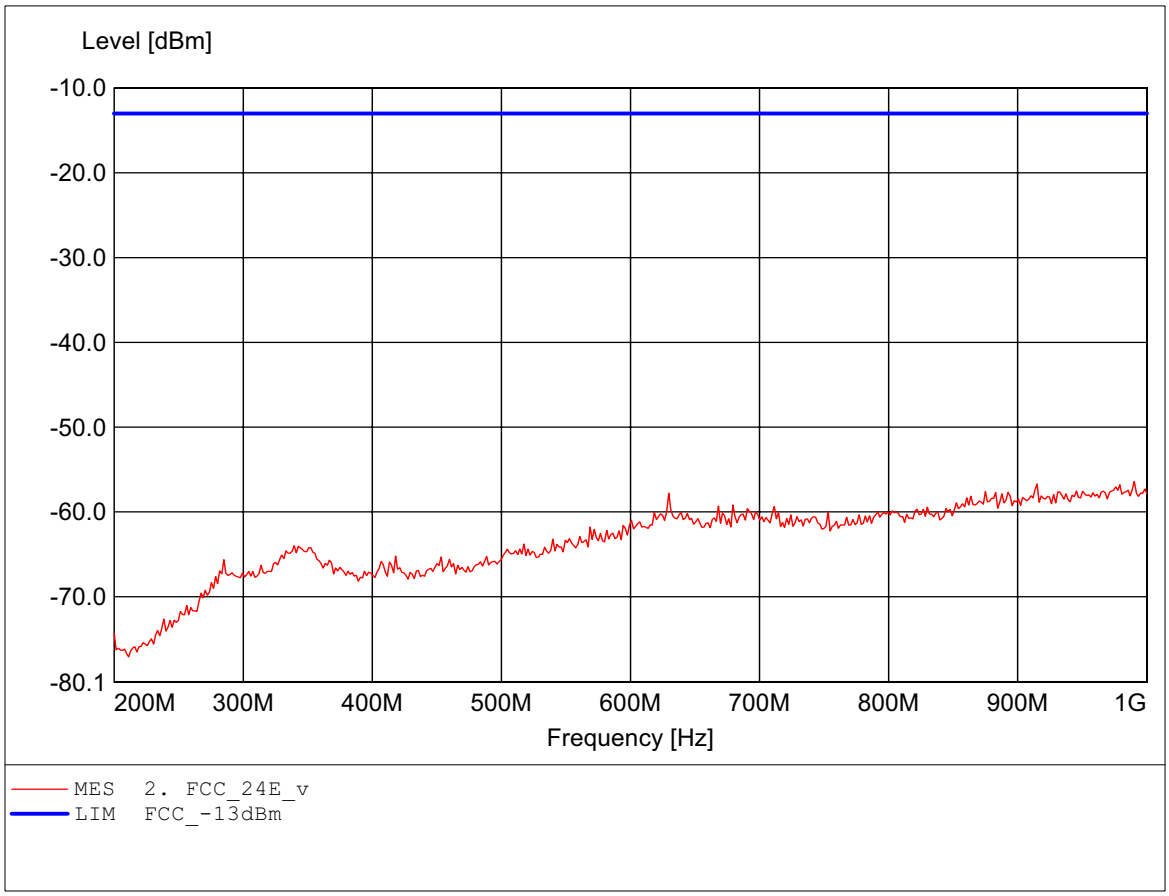
```
Order Number :         W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL 223
                      Freq: 629.659MHz, Pmax: -52.87dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

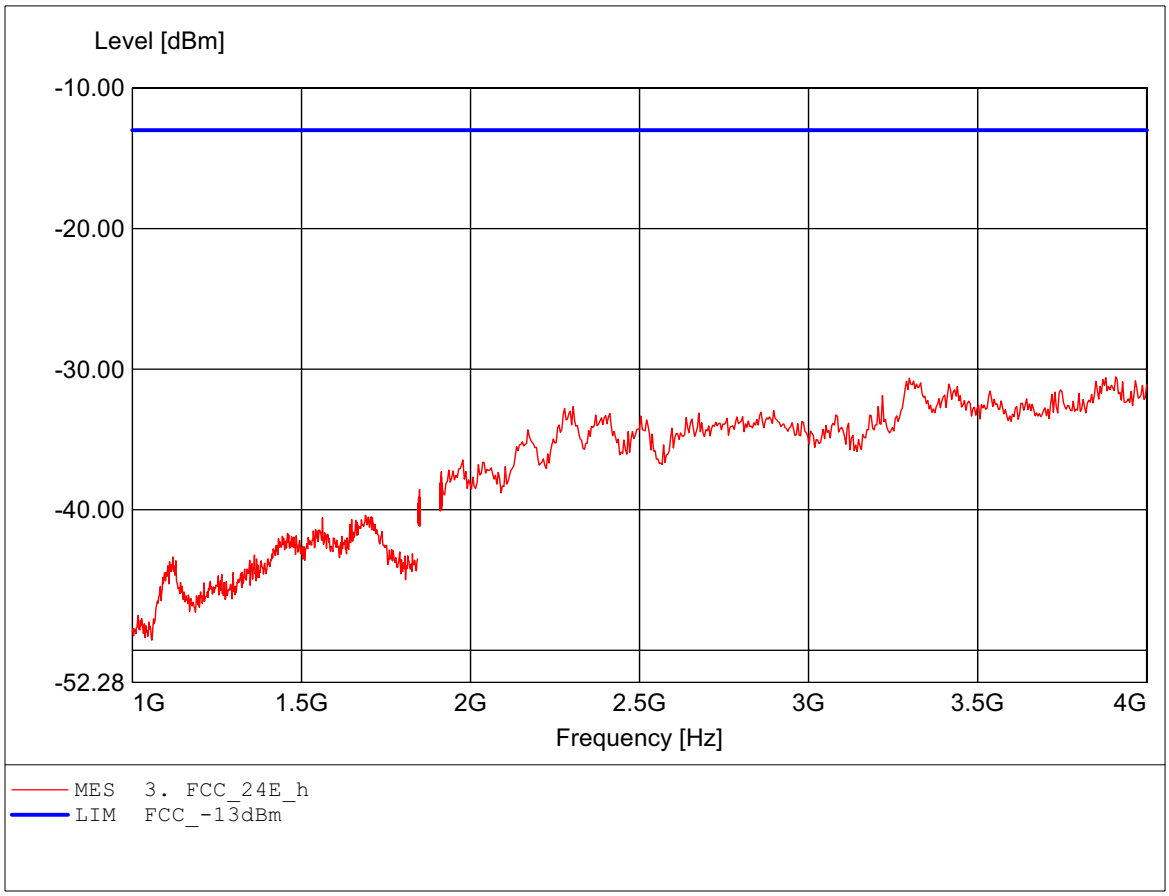
```
Order Number :        W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL 223
                      Freq: 990.381MHz, Pmax: -56.41dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

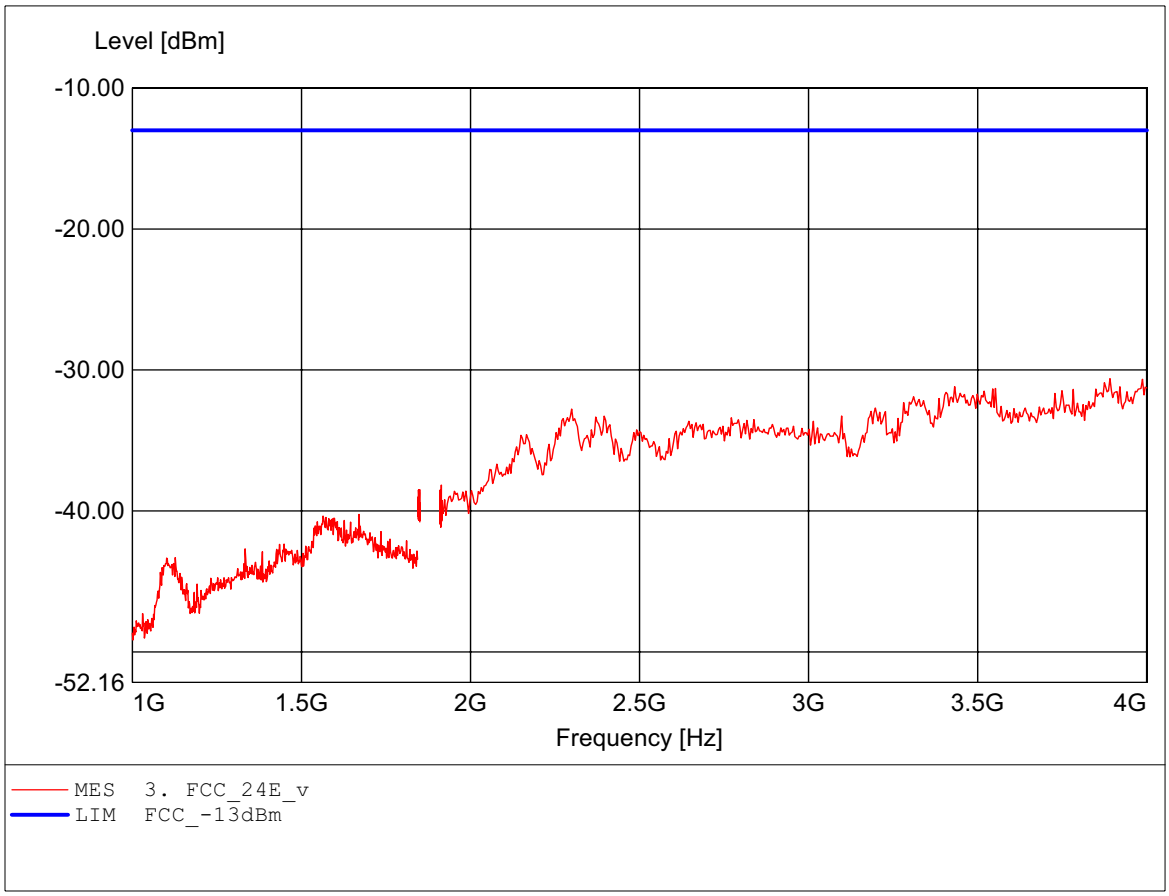
```
Order Number :        W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025
                      Freq: 3.908GHz, Pmax: -30.55dBm, RBW: 1MHz/3kHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

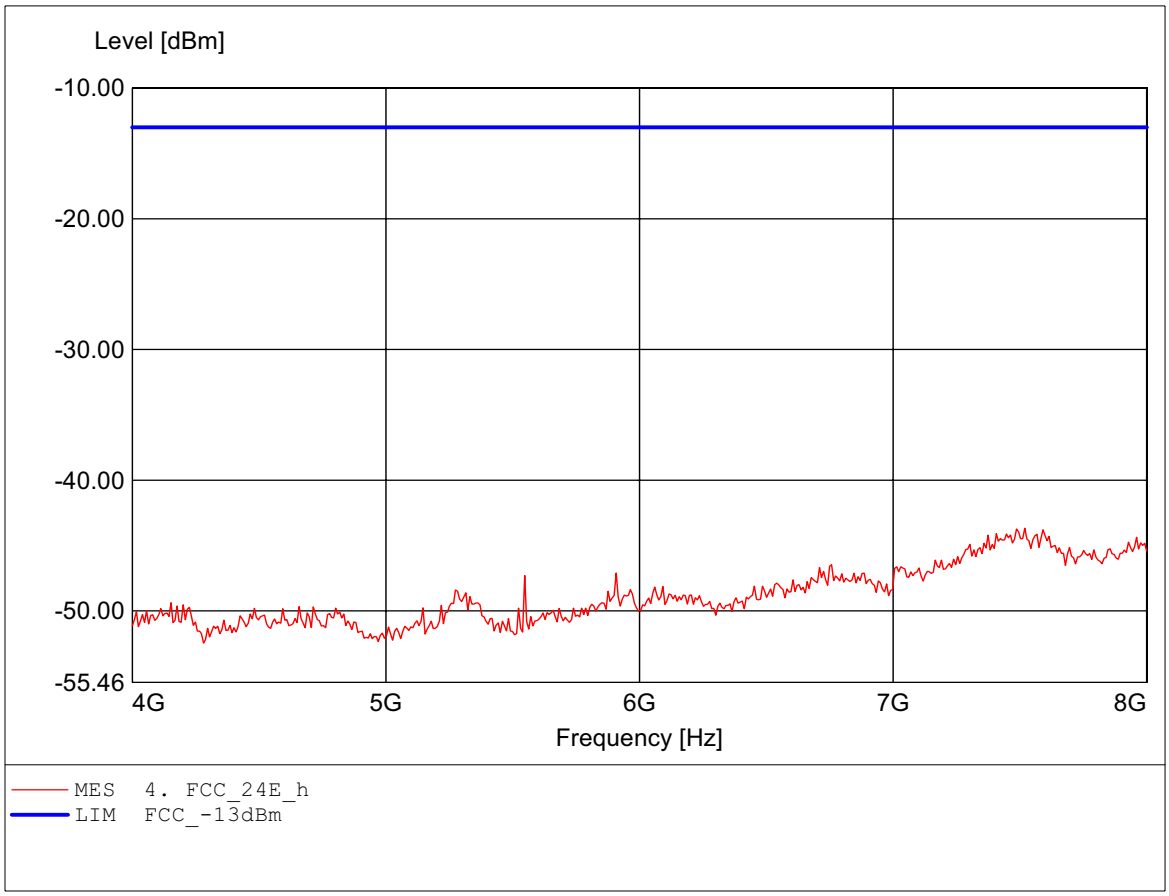
```
Order Number :         W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025
                      Freq: 3.891GHz, Pmax: -30.62dBm, RBW: 1MHz/3kHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

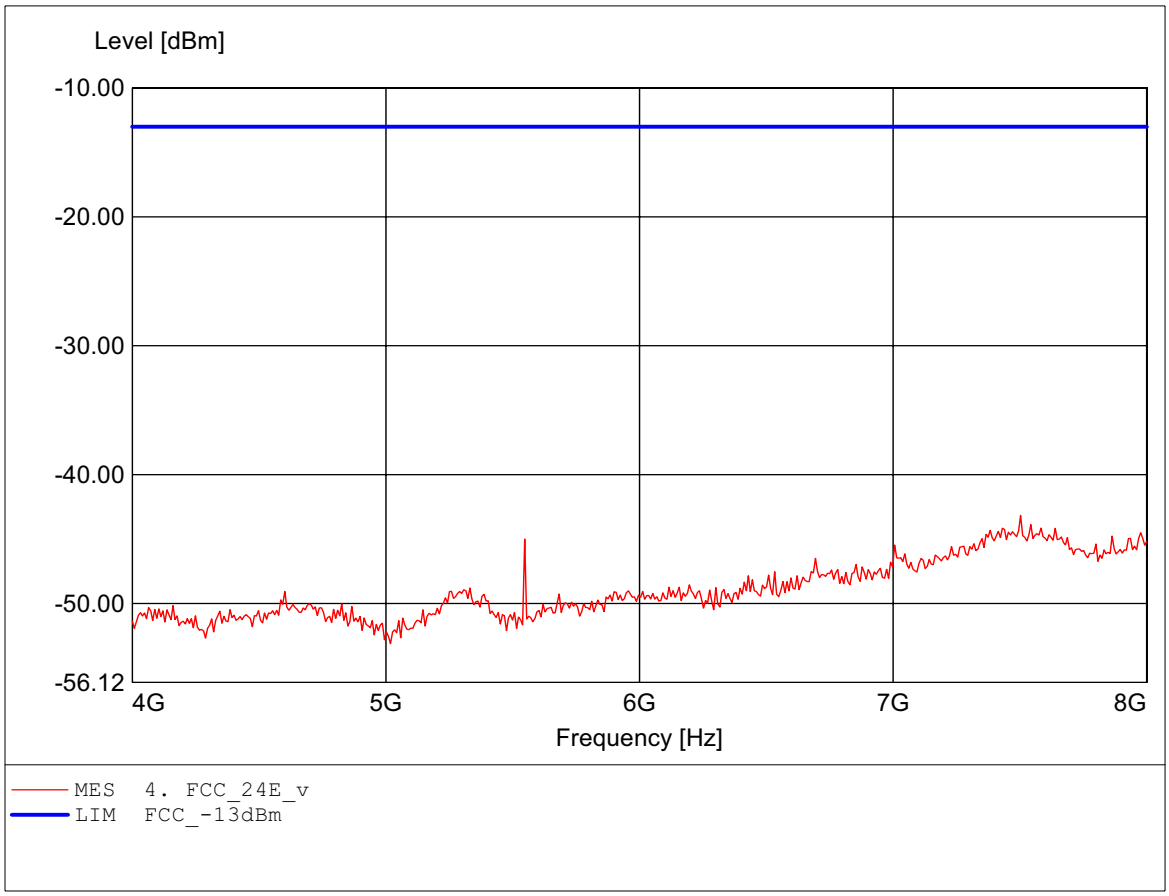
```
Order Number :        W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, ampl.+HP.
                      Freq: 7.519GHz, Pmax: -43.67dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

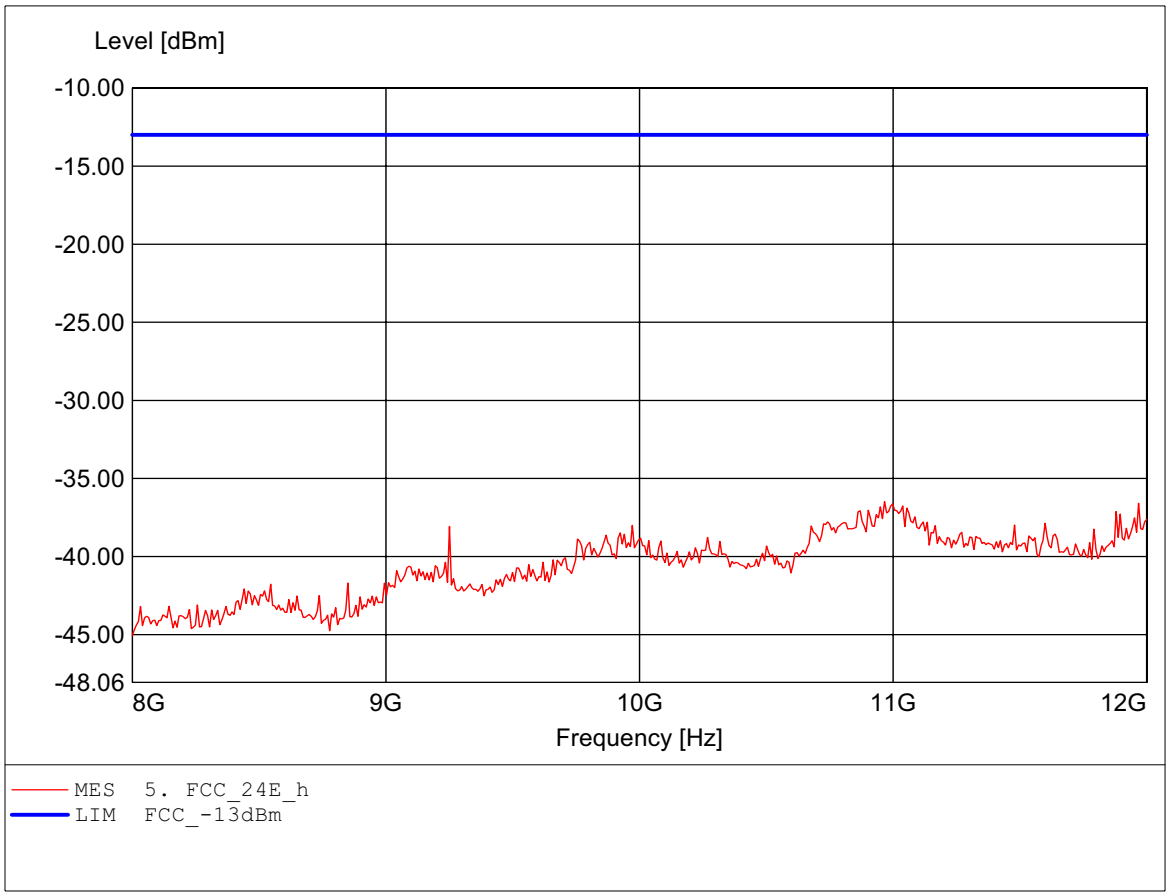
```
Order Number :        W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, ampl.+HP.
                      Freq: 7.503GHz, Pmax: -43.17dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

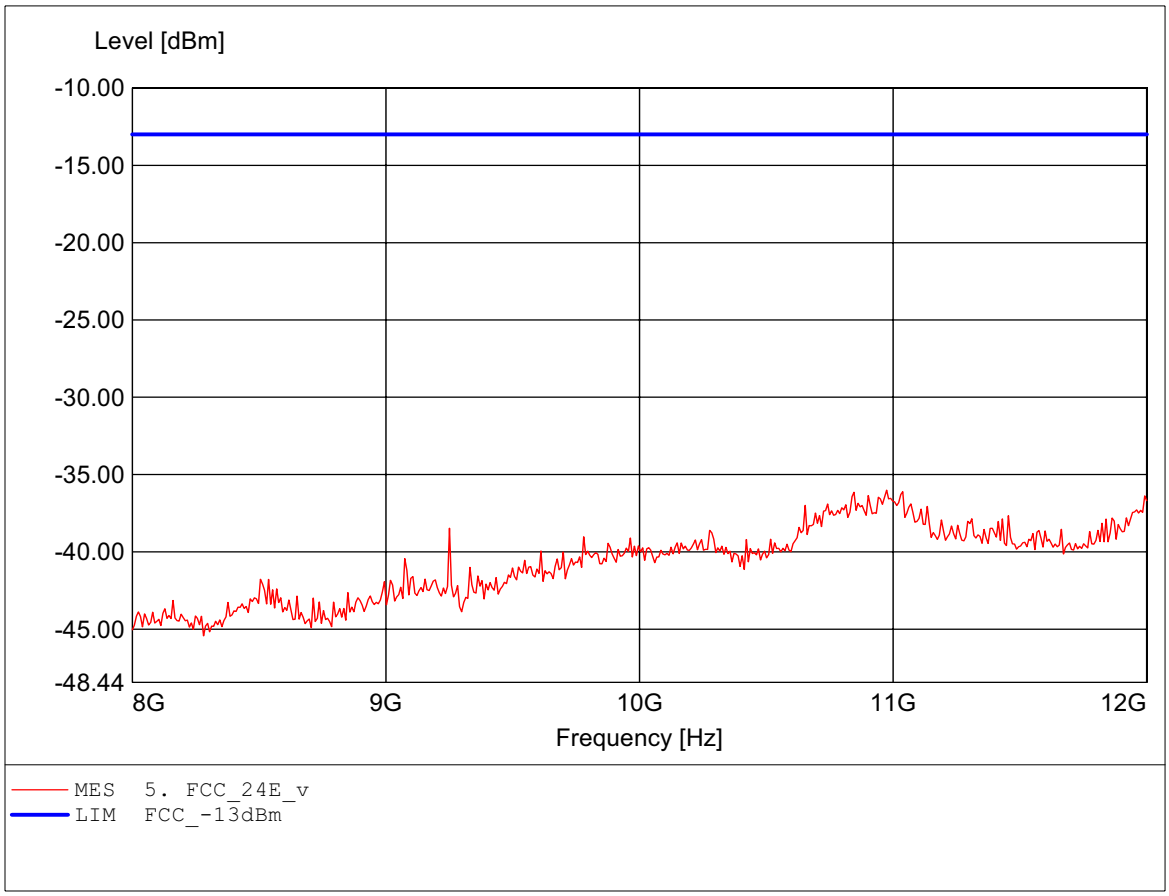
```
Order Number :        W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, ampl.+HP.
                      Freq: 10.966GHz, Pmax: -36.49dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

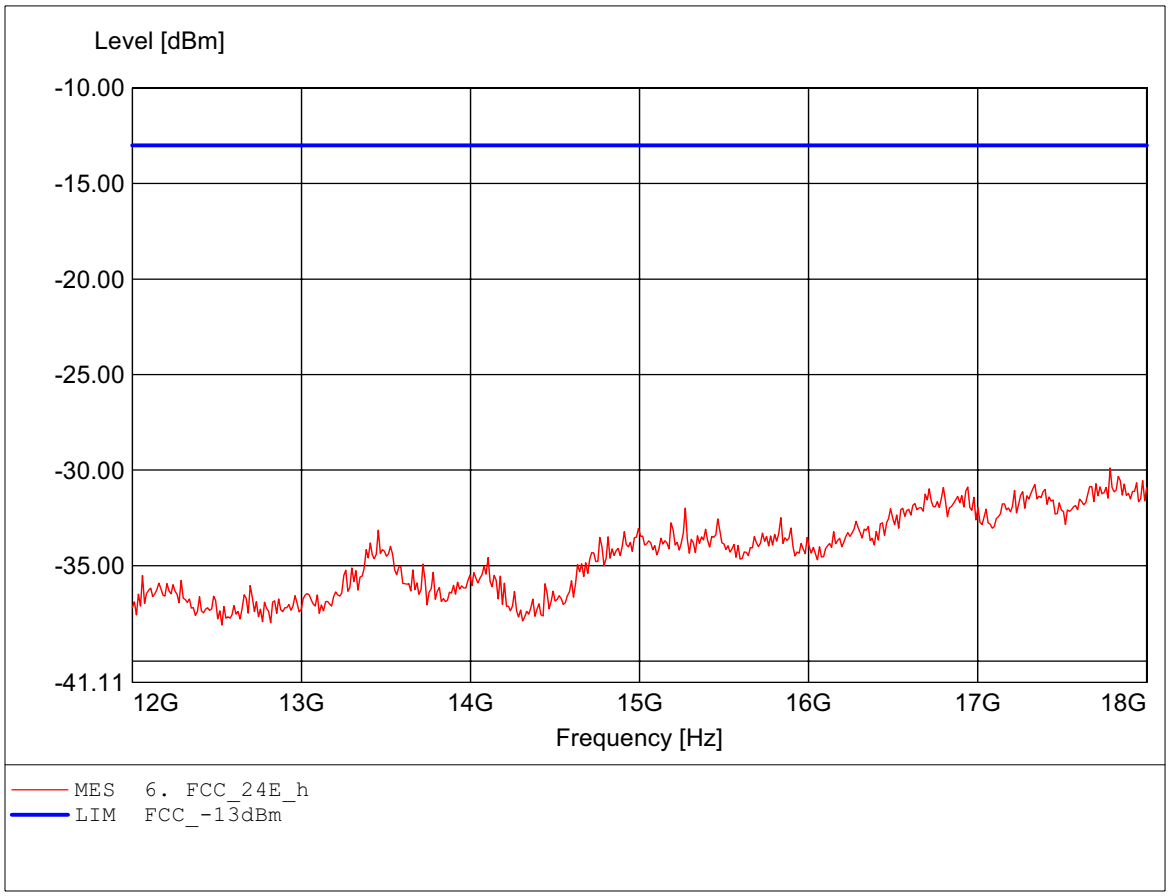
```
Order Number :        W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, ampl.+HP.
                      Freq: 10.974GHz, Pmax: -36.00dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

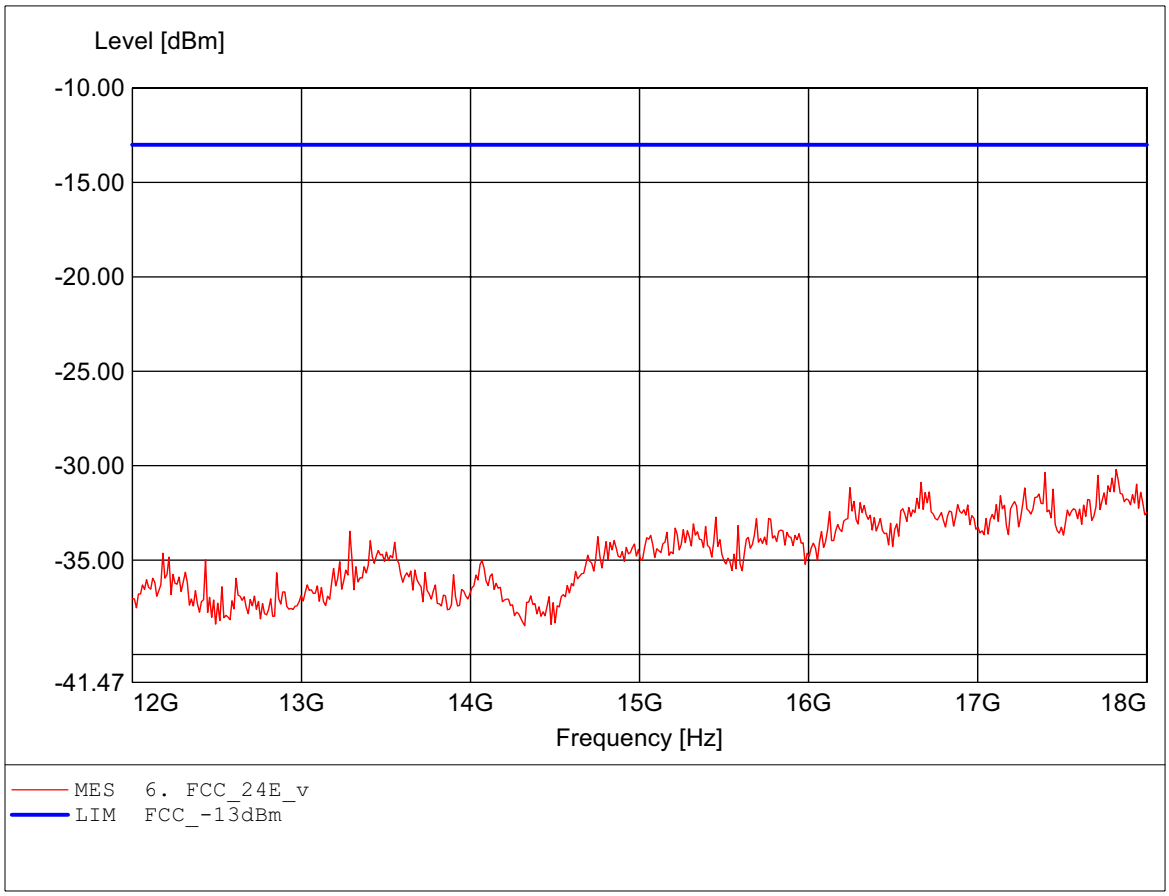
Order Number :	W6M20610-7519	ch512
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.	
	Freq: 17.784GHz, Pmax: -29.88dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

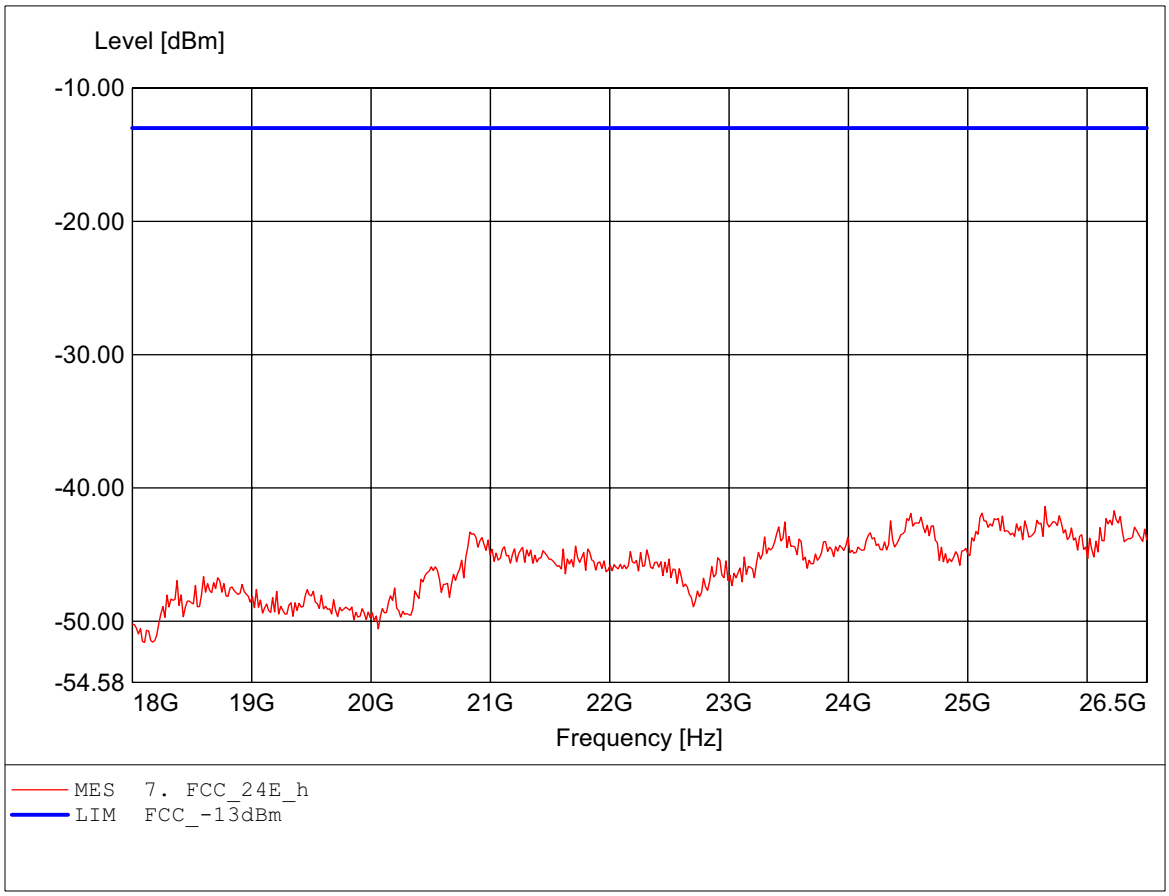
```
Order Number :          W6M20610-7519          ch512
Test Site / Operator:   ETS / Charles
Temperature:            Temp.: 23.9°C
                        according to $24.238
Comment 1:              Dist.: 3m, Ant.: HL025, ampl.+HP.
                        Freq: 17.820GHz, Pmax: -30.19dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

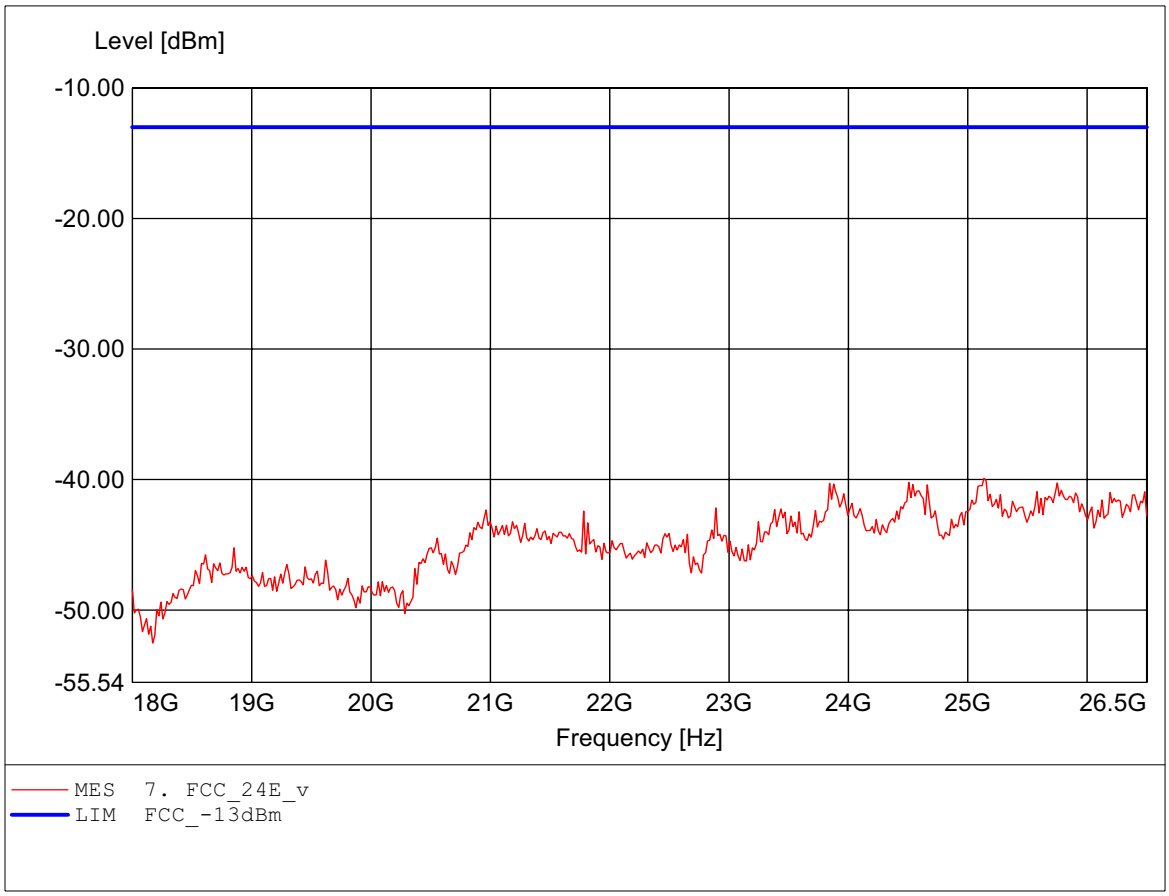
```
Order Number :        W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, amplif.
                      Freq: 25.648GHz, Pmax: -41.38dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

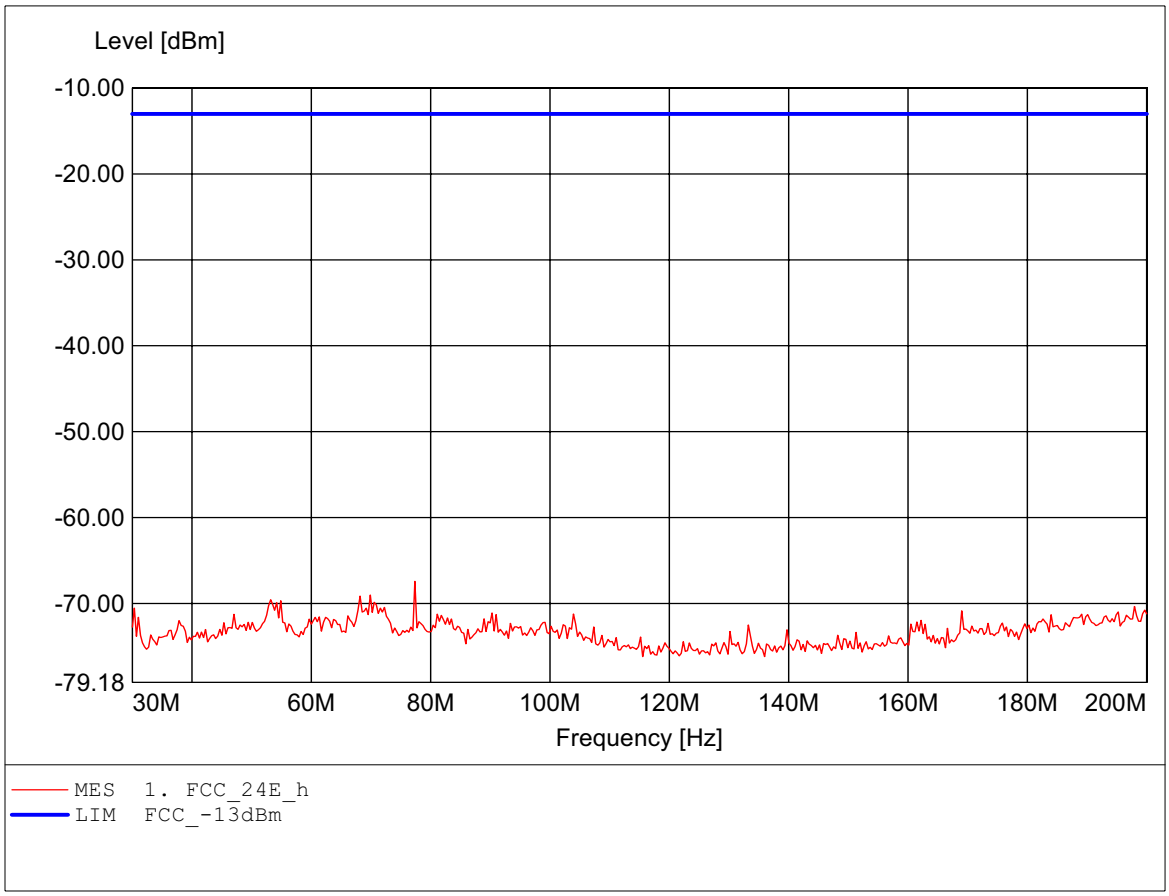
```
Order Number :        W6M20610-7519          ch512
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, amplif.
                      Freq: 25.137GHz, Pmax: -39.90dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

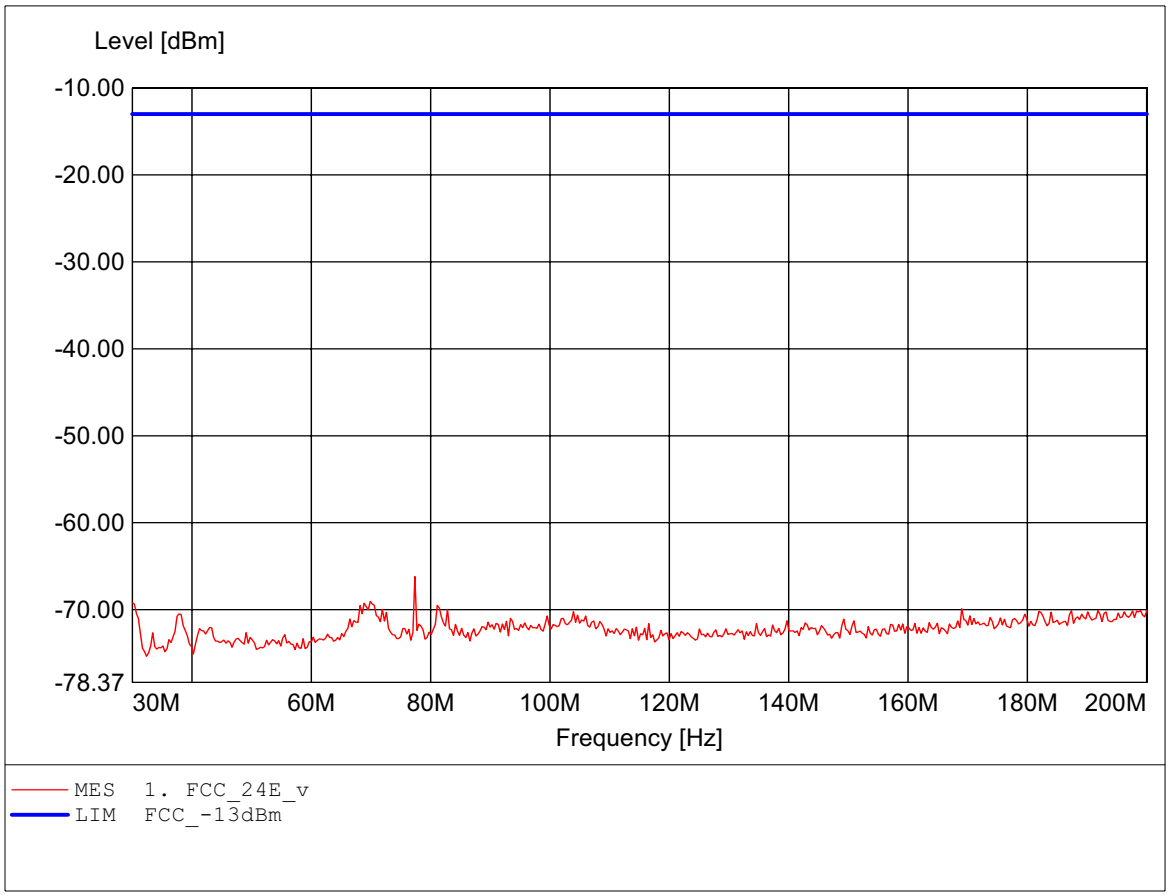
```
Order Number :         W6M20610-7519          ch661
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HK 116
                      Freq: 77.355MHz, Pmax: -67.42dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

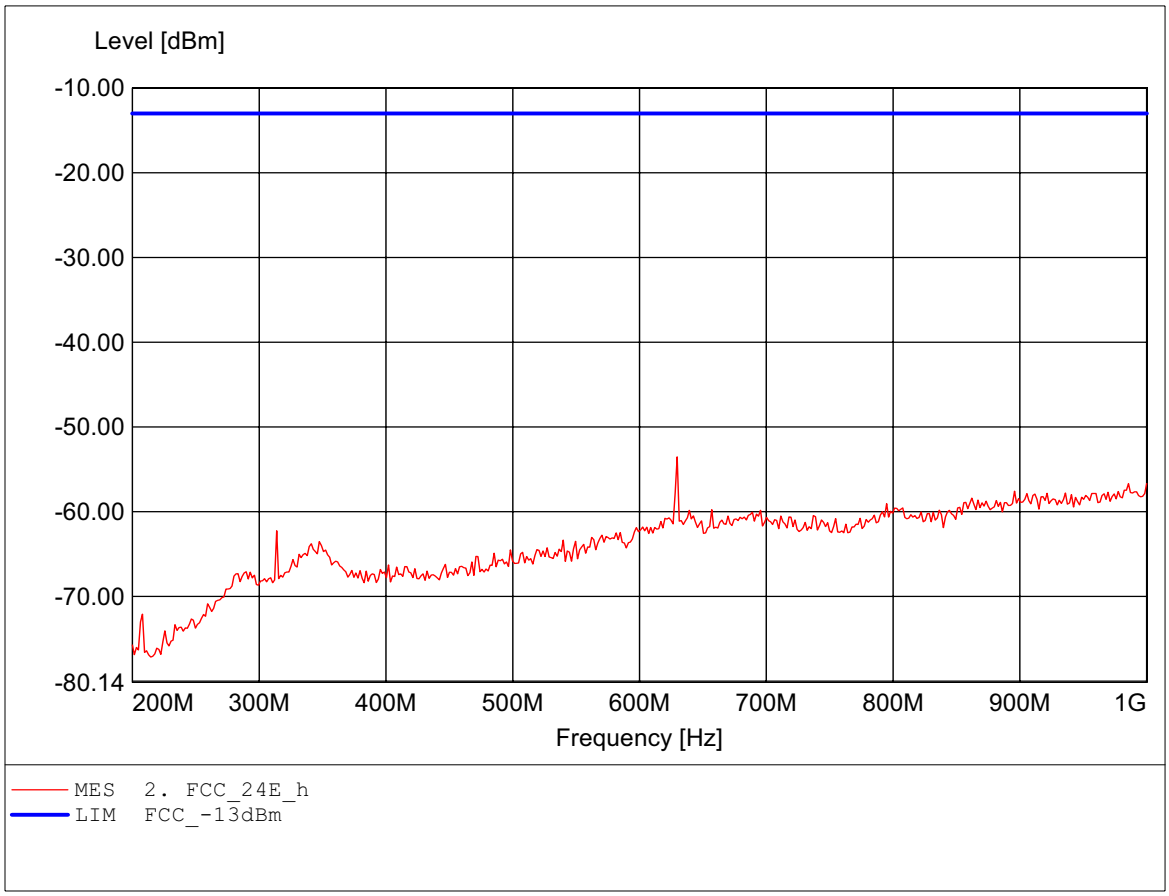
```
Order Number :        W6M20610-7519          ch661
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HK 116
                      Freq: 77.355MHz, Pmax: -66.21dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

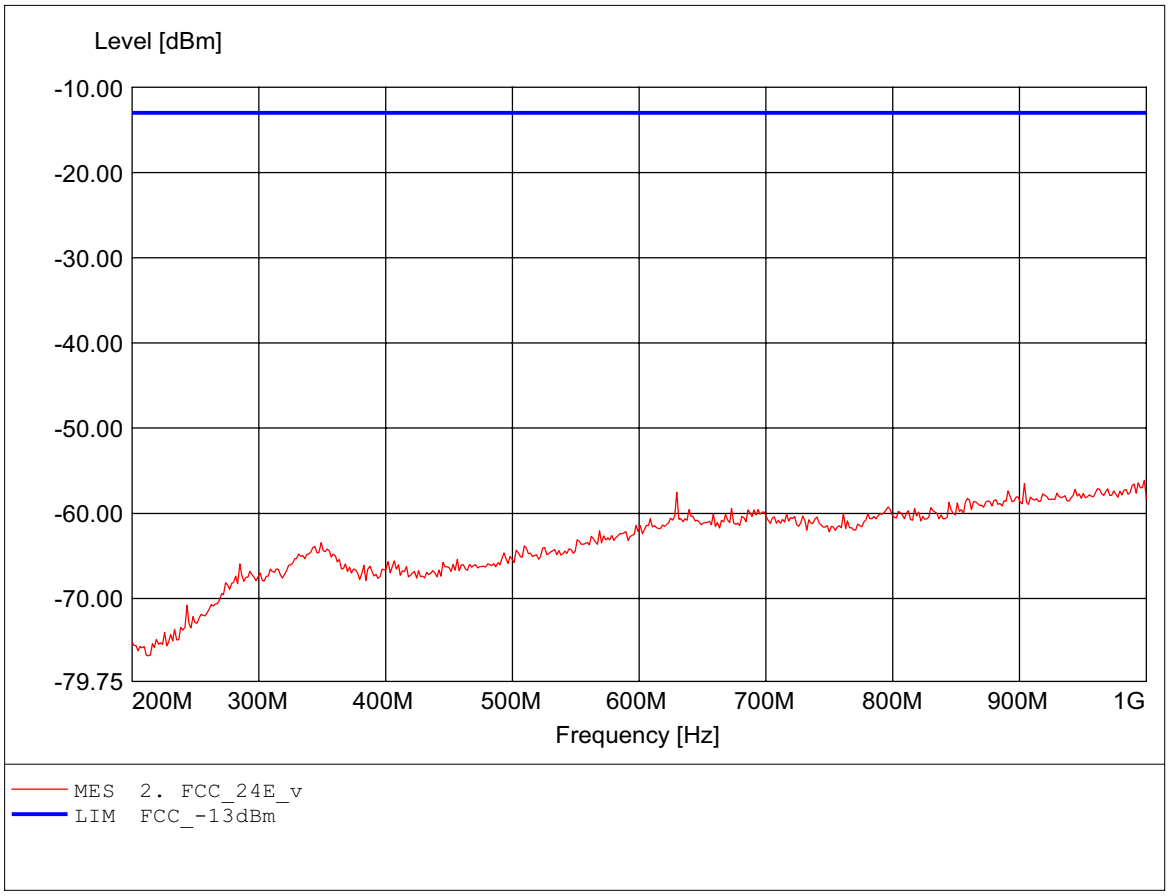
```
Order Number :        W6M20610-7519          ch661
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL 223
                      Freq: 629.659MHz, Pmax: -53.53dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

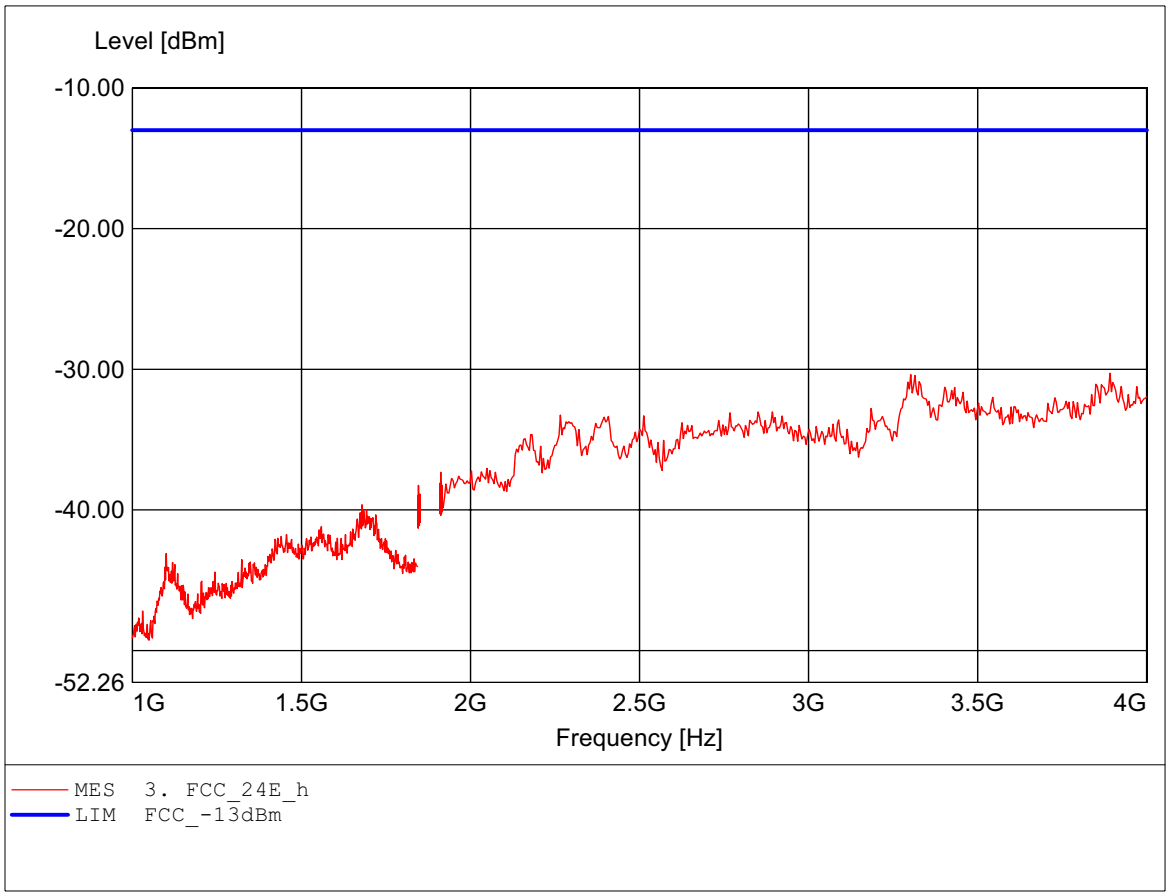
```
Order Number :        W6M20610-7519        ch661
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL 223
                      Freq: 998.397MHz, Pmax: -56.12dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

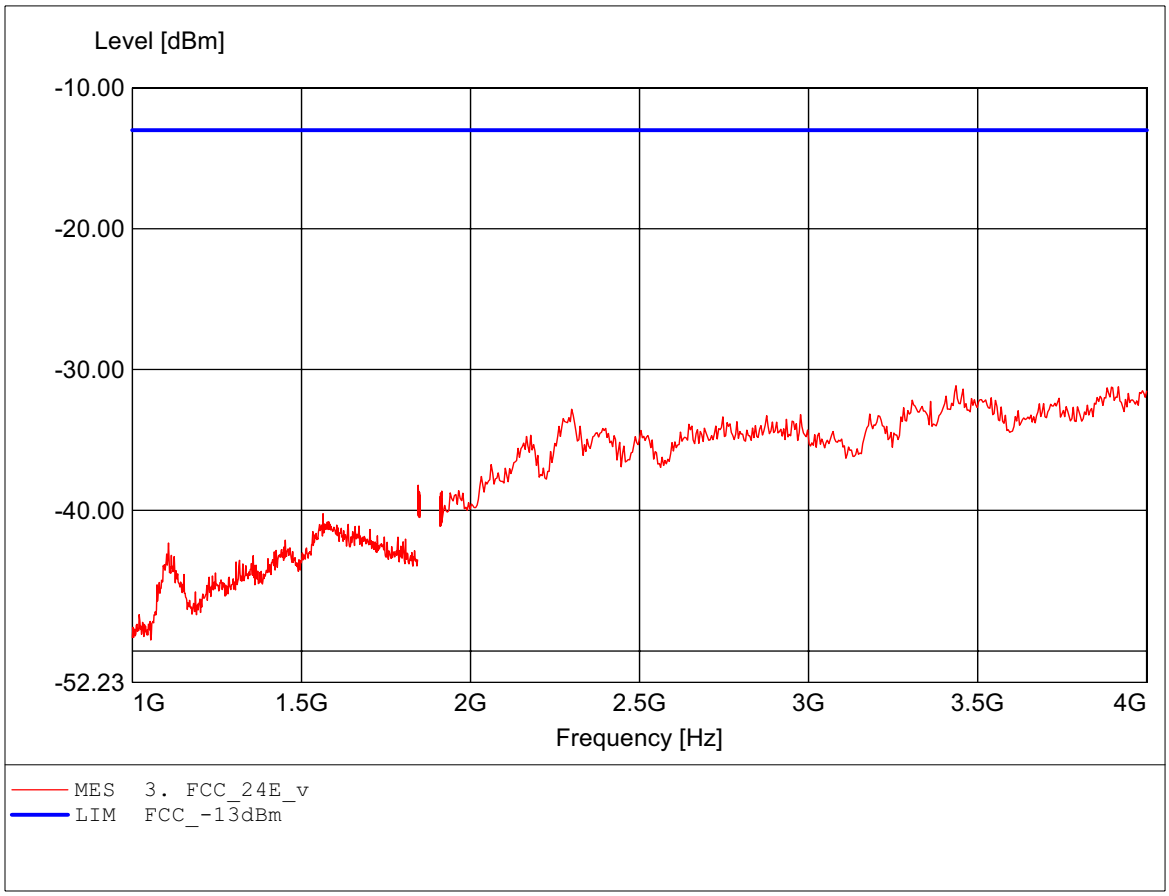
```
Order Number :        W6M20610-7519          ch661
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025
                      Freq: 3.891GHz, Pmax: -30.28dBm, RBW: 1MHz/3kHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

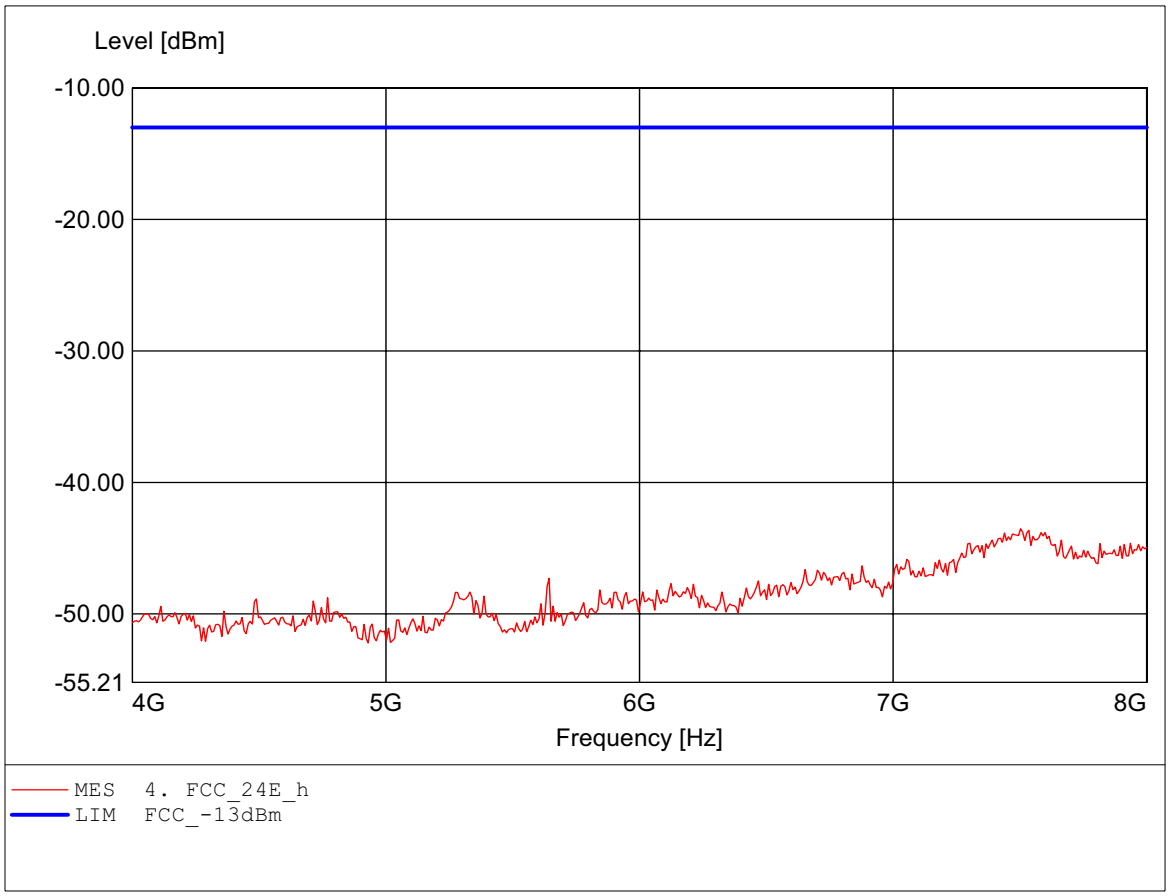
```
Order Number :         W6M20610-7519          ch661
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025
                      Freq: 3.436GHz, Pmax: -31.14dBm, RBW: 1MHz/3kHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

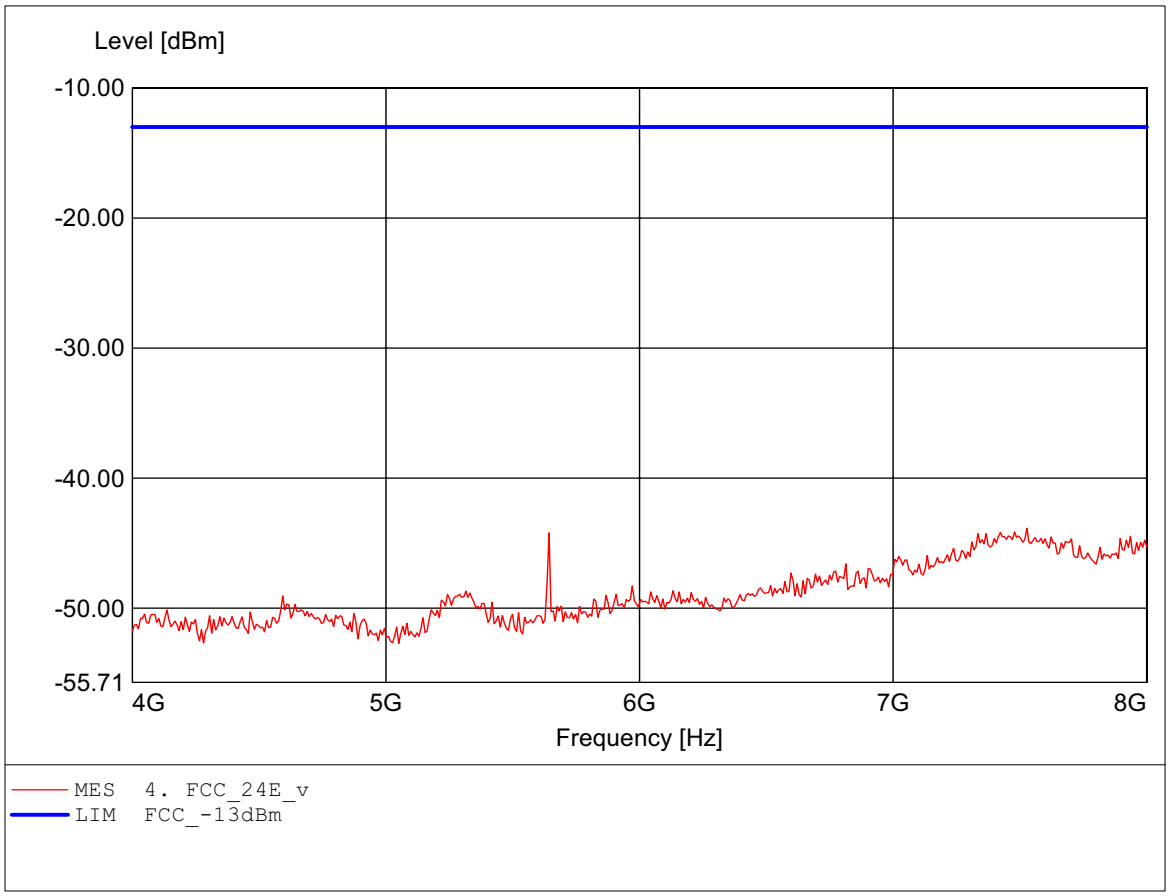
Order Number :	W6M20610-7519	ch661
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.	
	Freq: 7.503GHz, Pmax: -43.52dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

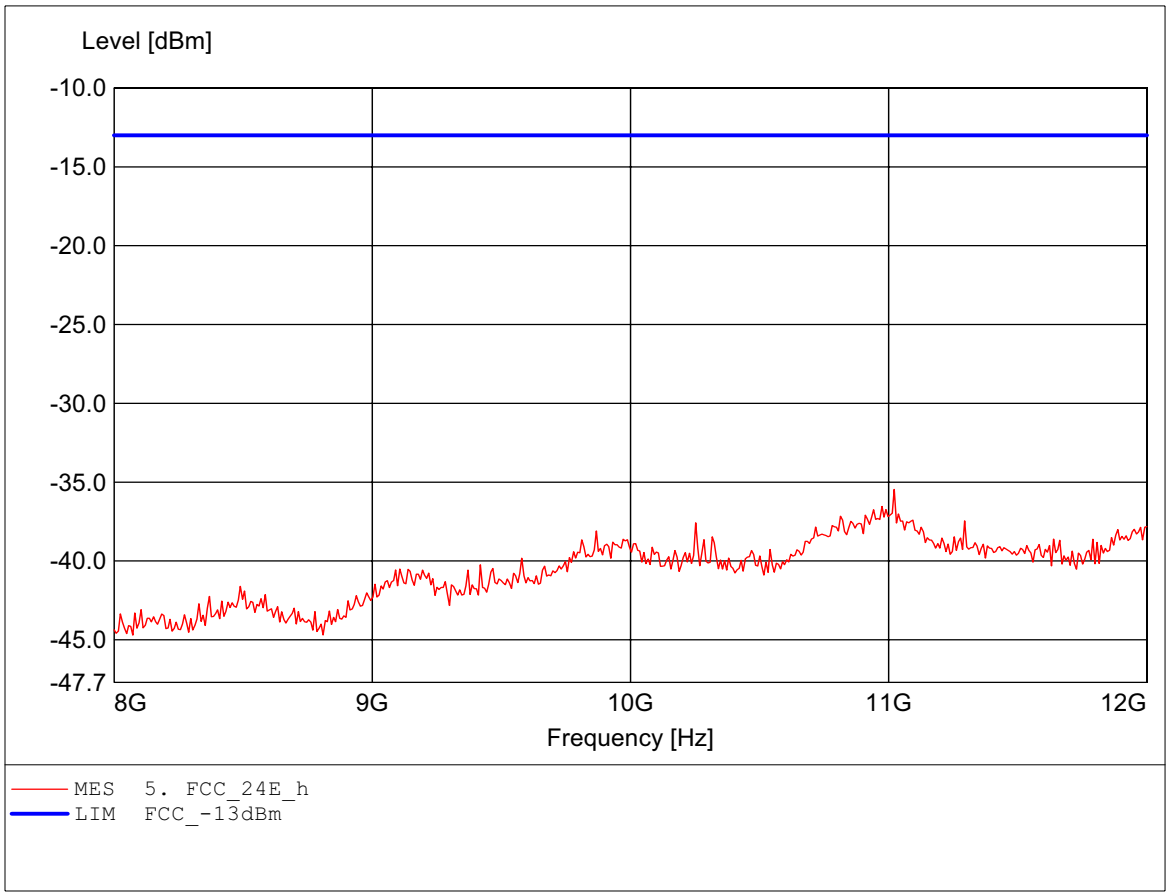
Order Number :	W6M20610-7519	ch661
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.	
	Freq: 7.527GHz, Pmax: -43.85dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

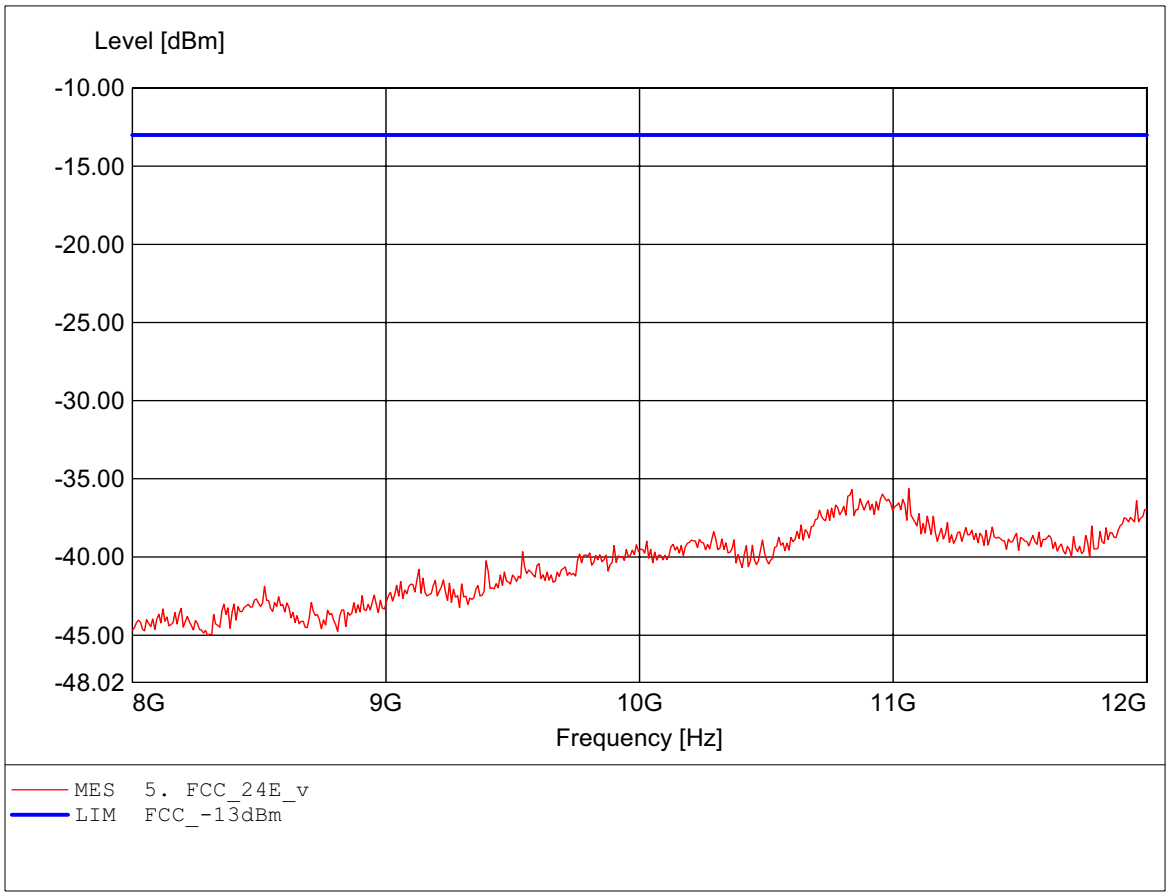
```
Order Number :        W6M20610-7519          ch661
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, ampl.+HP.
                      Freq: 11.022GHz, Pmax: -35.46dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

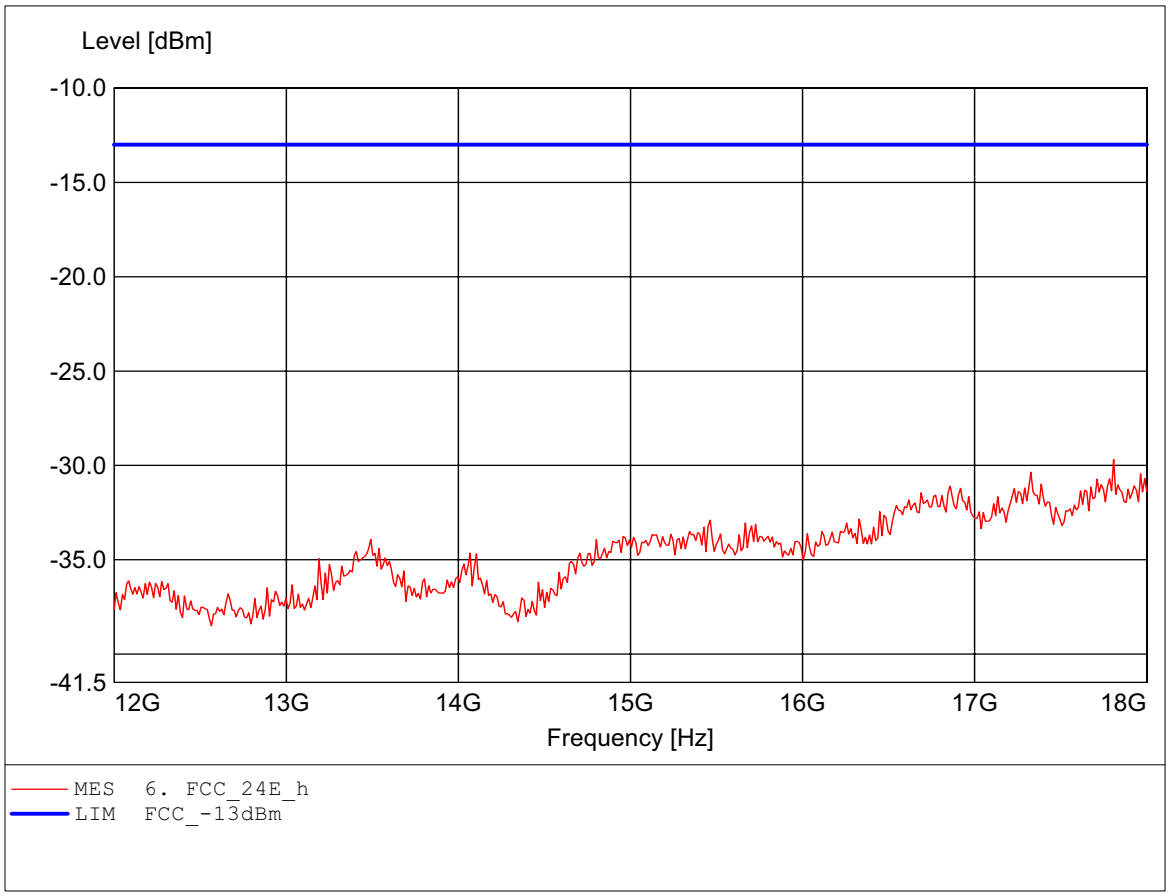
```
Order Number :        W6M20610-7519          ch661
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, ampl.+HP.
                      Freq: 11.062GHz, Pmax: -35.61dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

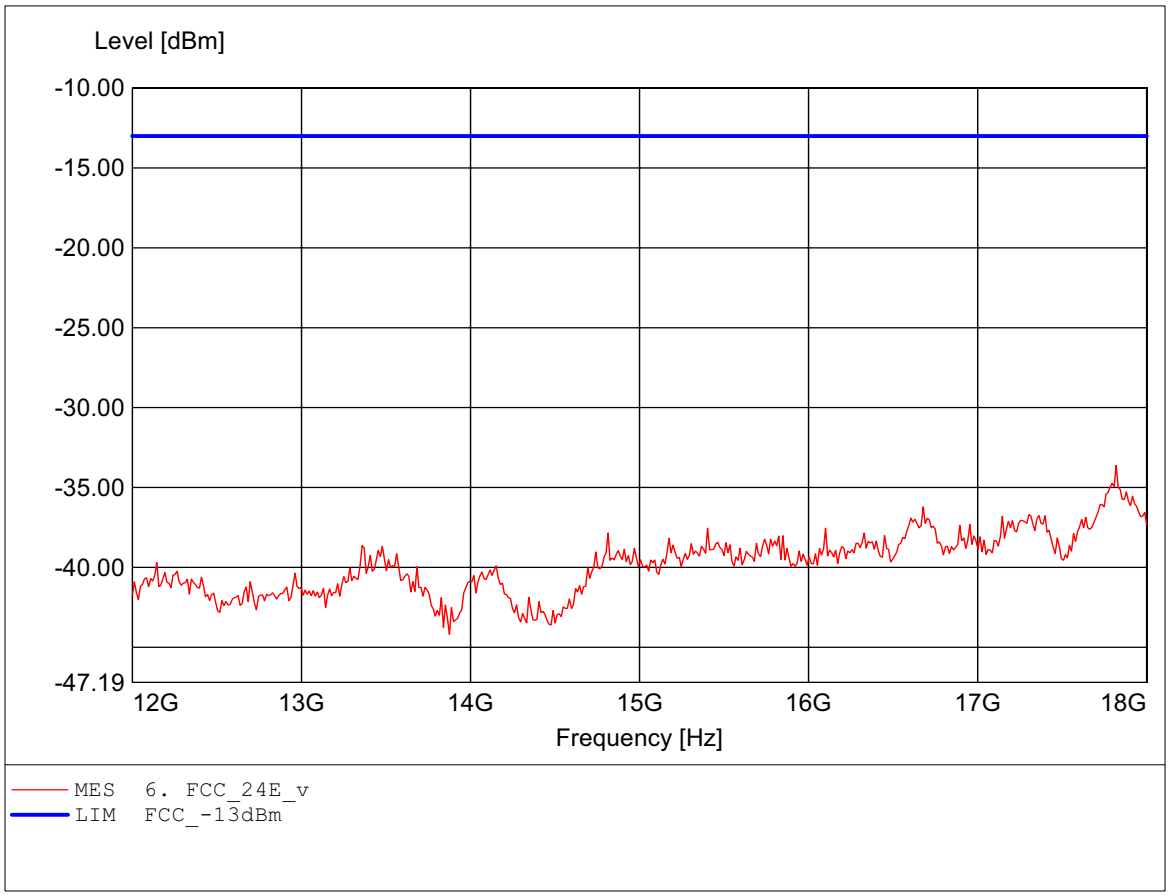
Order Number :	W6M20610-7519	ch661
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.	
	Freq: 17.808GHz, Pmax: -29.69dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

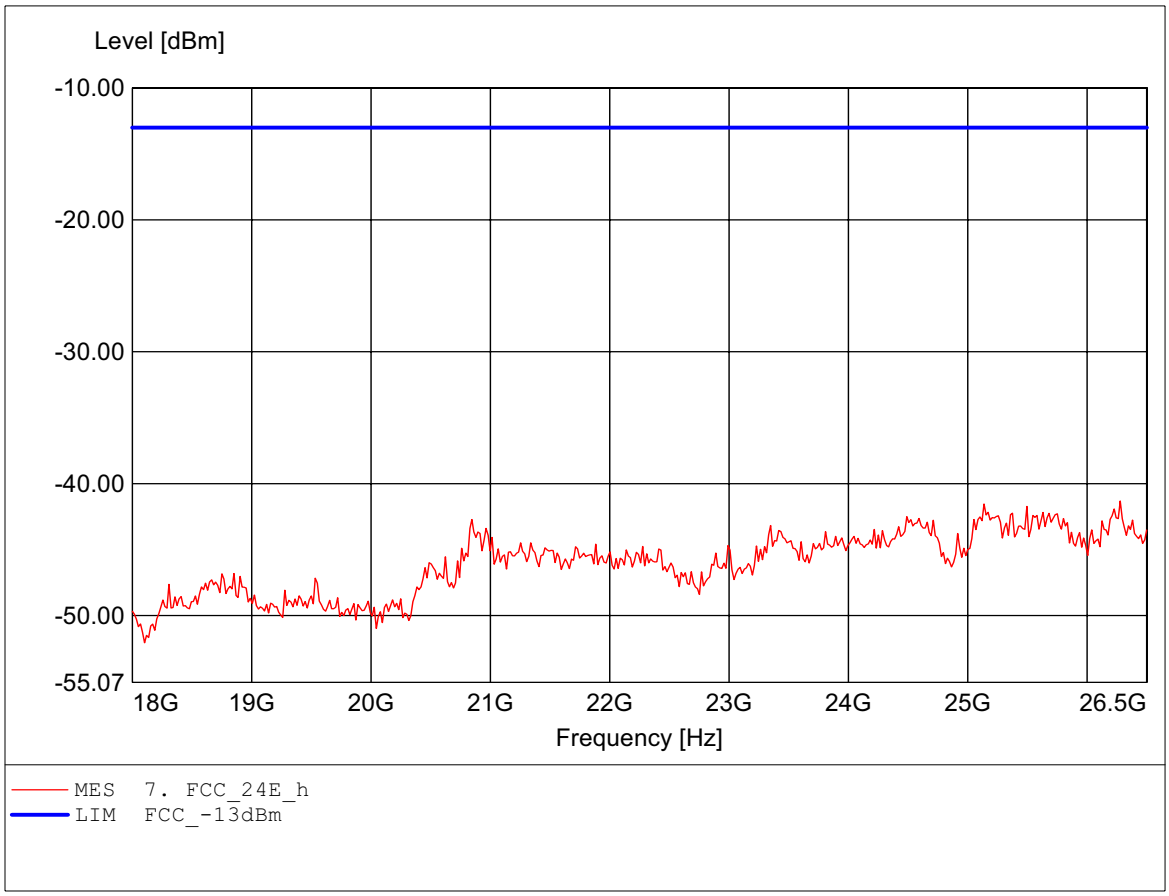
Order Number :	W6M20610-7519	ch661
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.	
	Freq: 17.820GHz, Pmax: -33.62dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

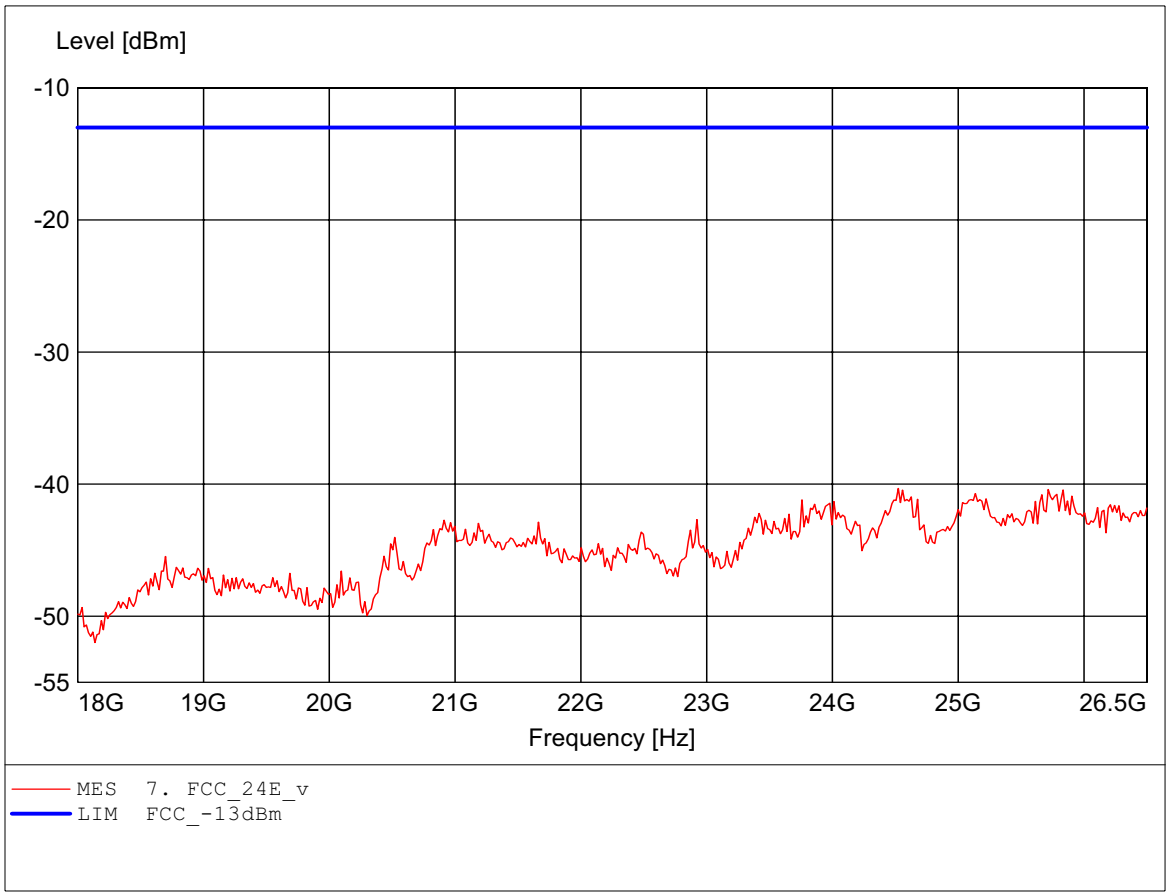
```
Order Number :        W6M20610-7519          ch661
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, amplif.
                      Freq: 26.279GHz, Pmax: -41.31dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

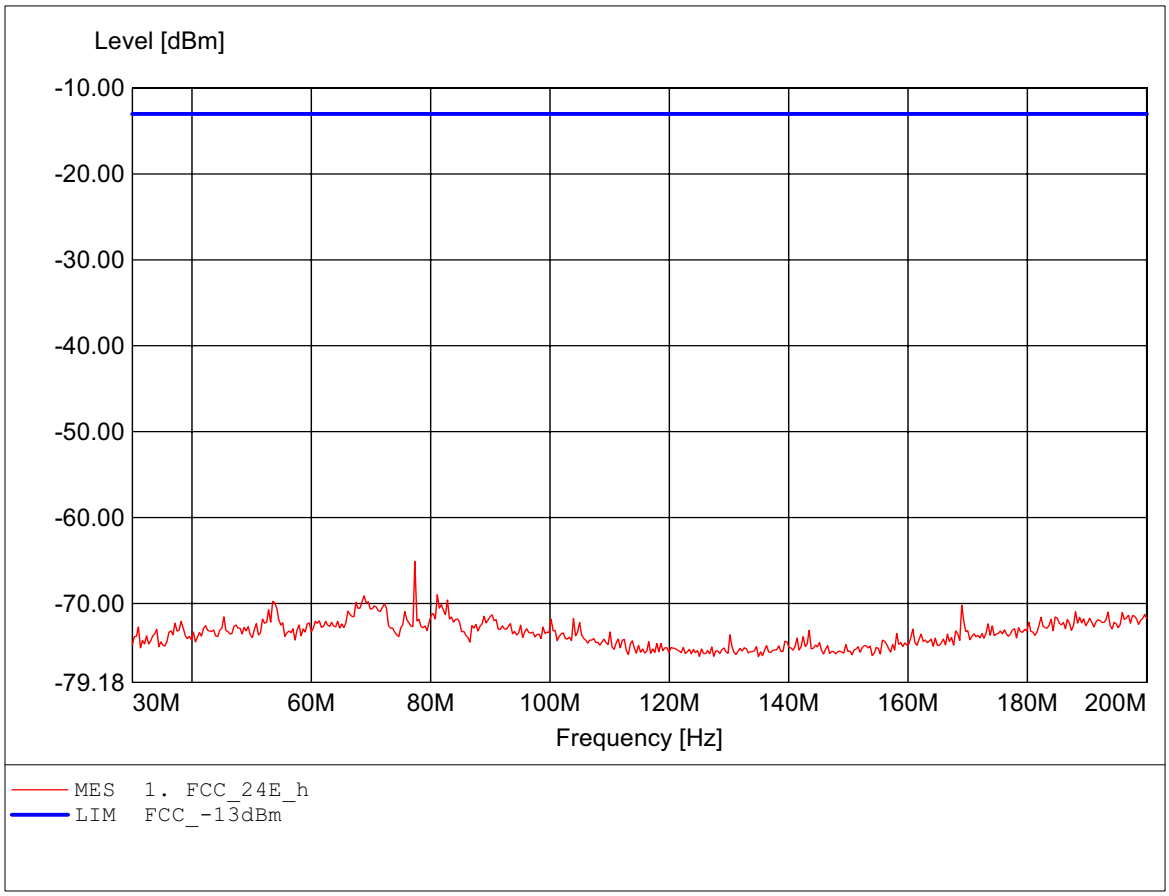
Order Number :	W6M20610-7519	ch661
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.	
	Freq: 24.524GHz, Pmax: -40.33dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

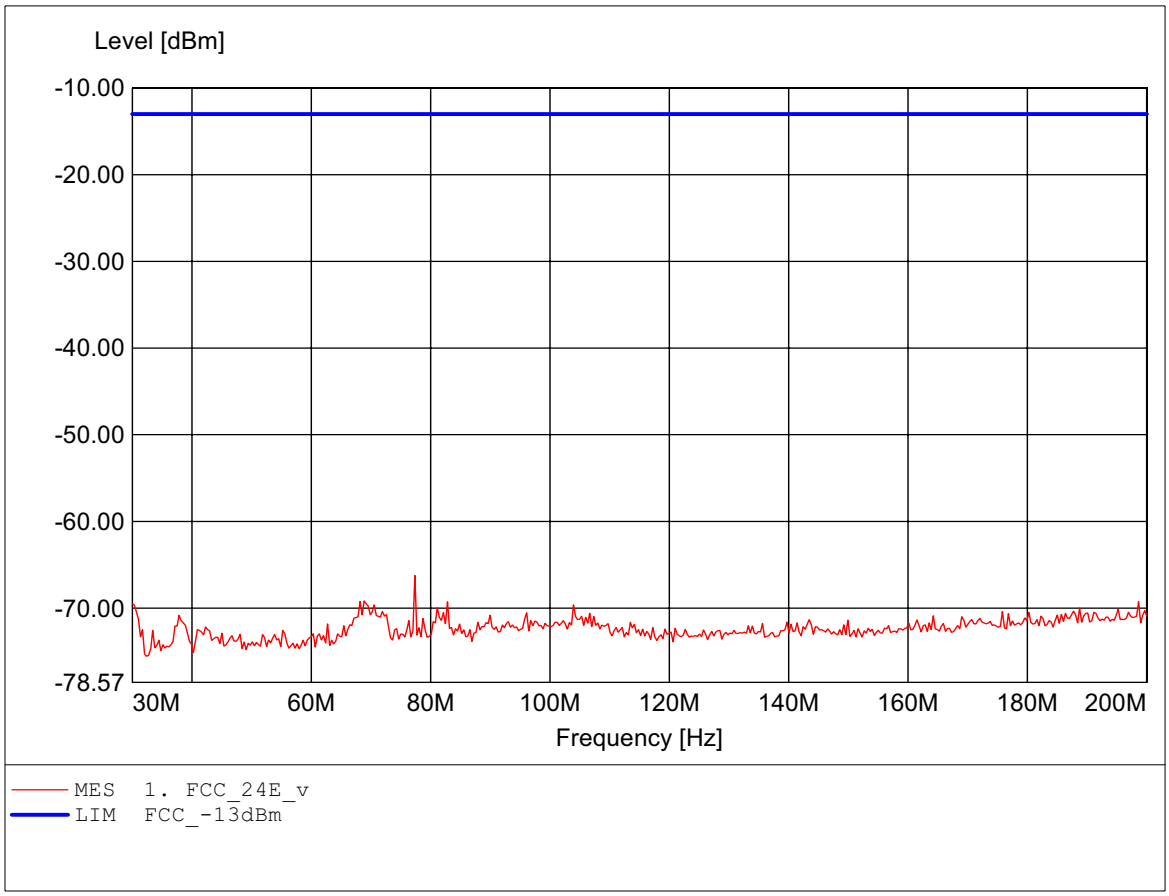
```
Order Number :        W6M20610-7519          ch810
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HK 116
                      Freq: 77.355MHz, Pmax: -65.11dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

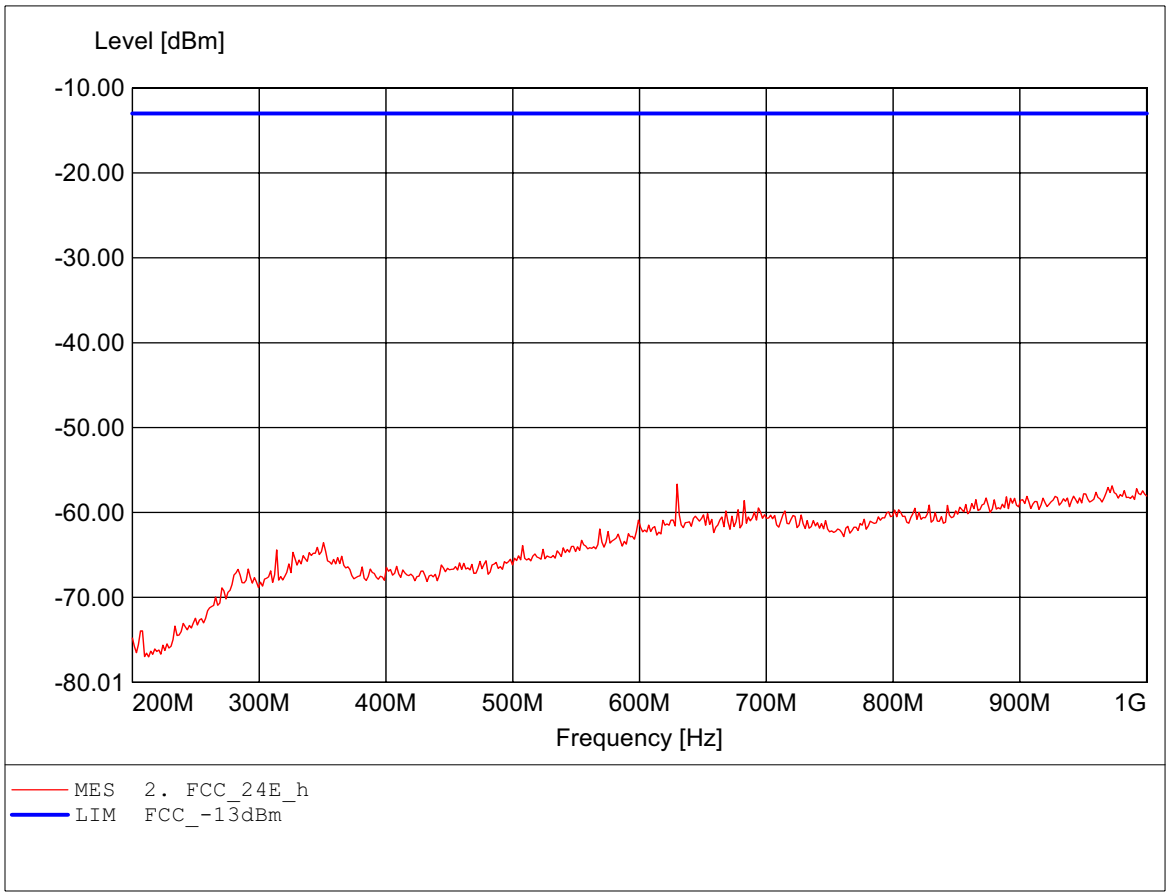
```
Order Number :         W6M20610-7519          ch810
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HK 116
                      Freq: 77.355MHz, Pmax: -66.25dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

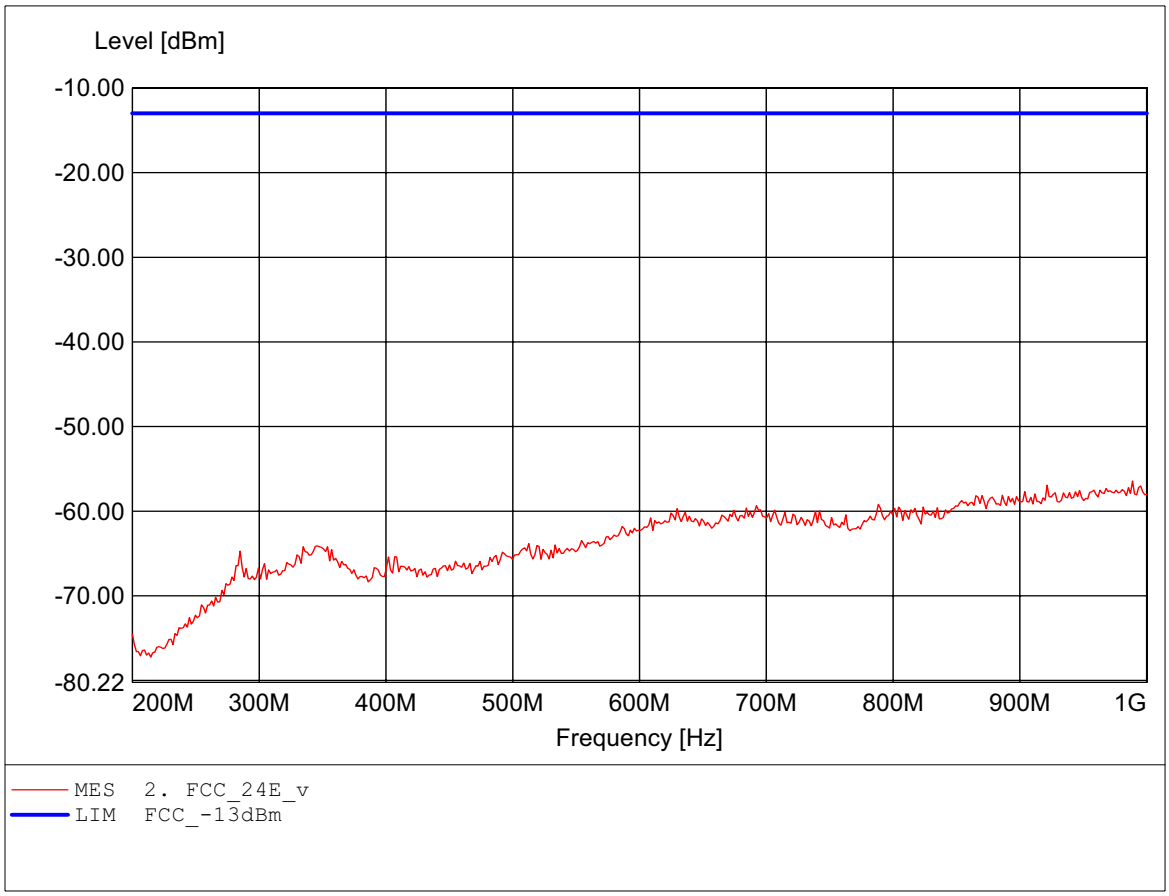
```
Order Number :        W6M20610-7519          ch810
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL 223
                      Freq: 629.659MHz, Pmax: -56.66dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

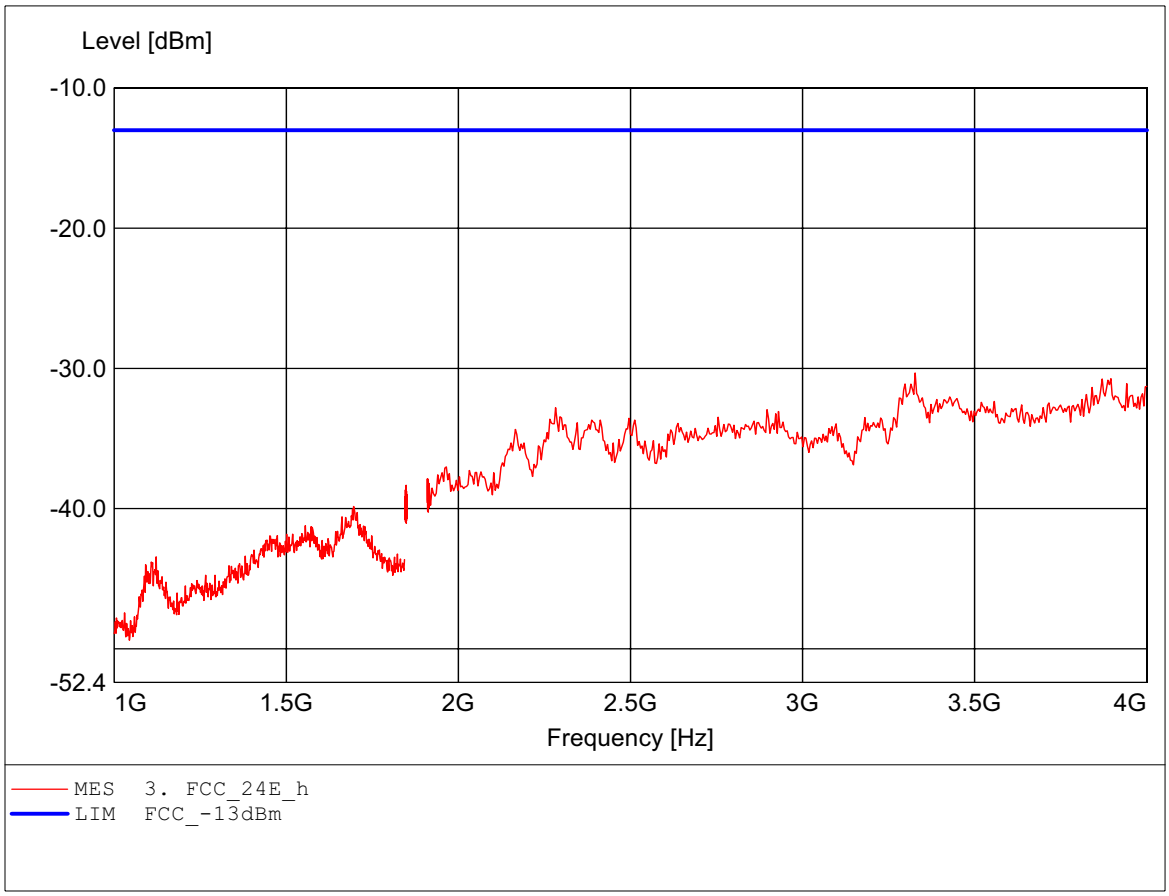
```
Order Number :        W6M20610-7519          ch810
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL 223
                      Freq: 988.778MHz, Pmax: -56.42dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

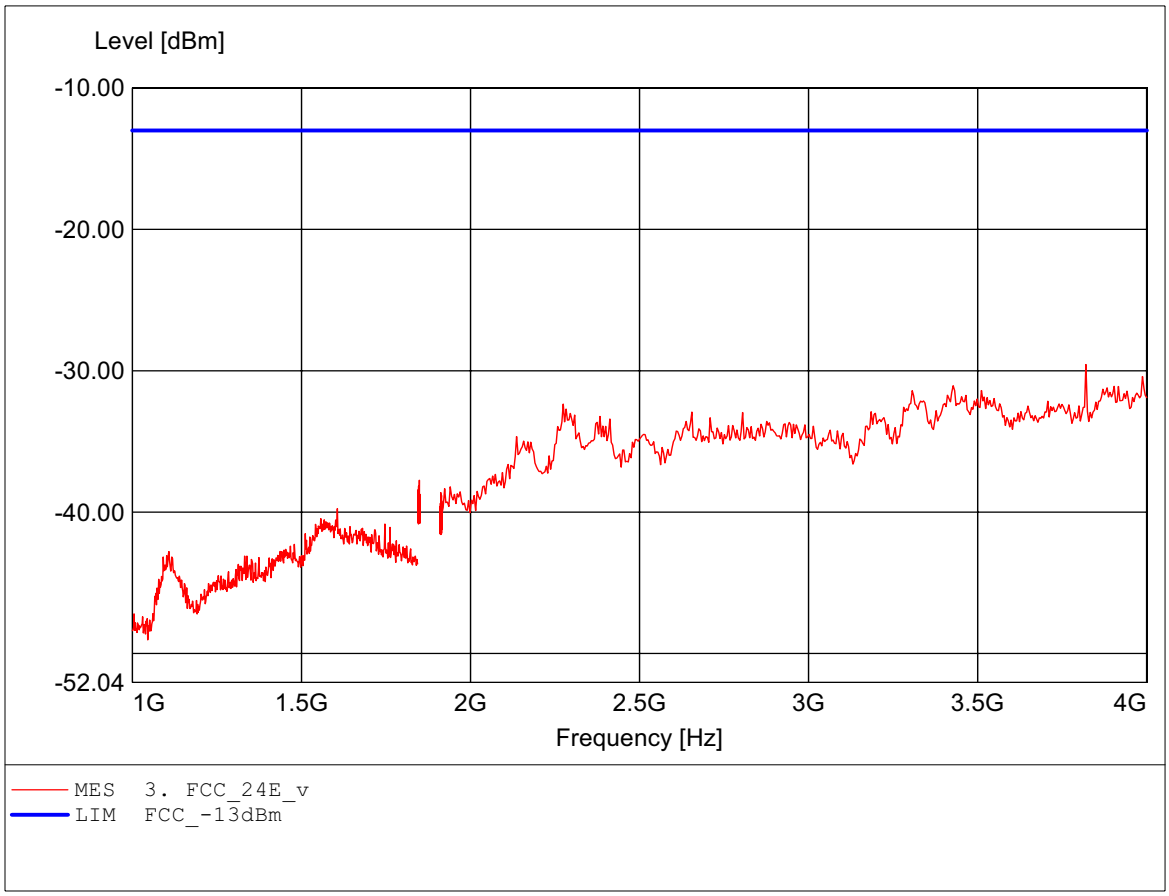
Order Number :	W6M20610-7519	ch810
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025	
	Freq: 3.327GHz, Pmax: -30.32dBm, RBW: 1MHz/3kHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

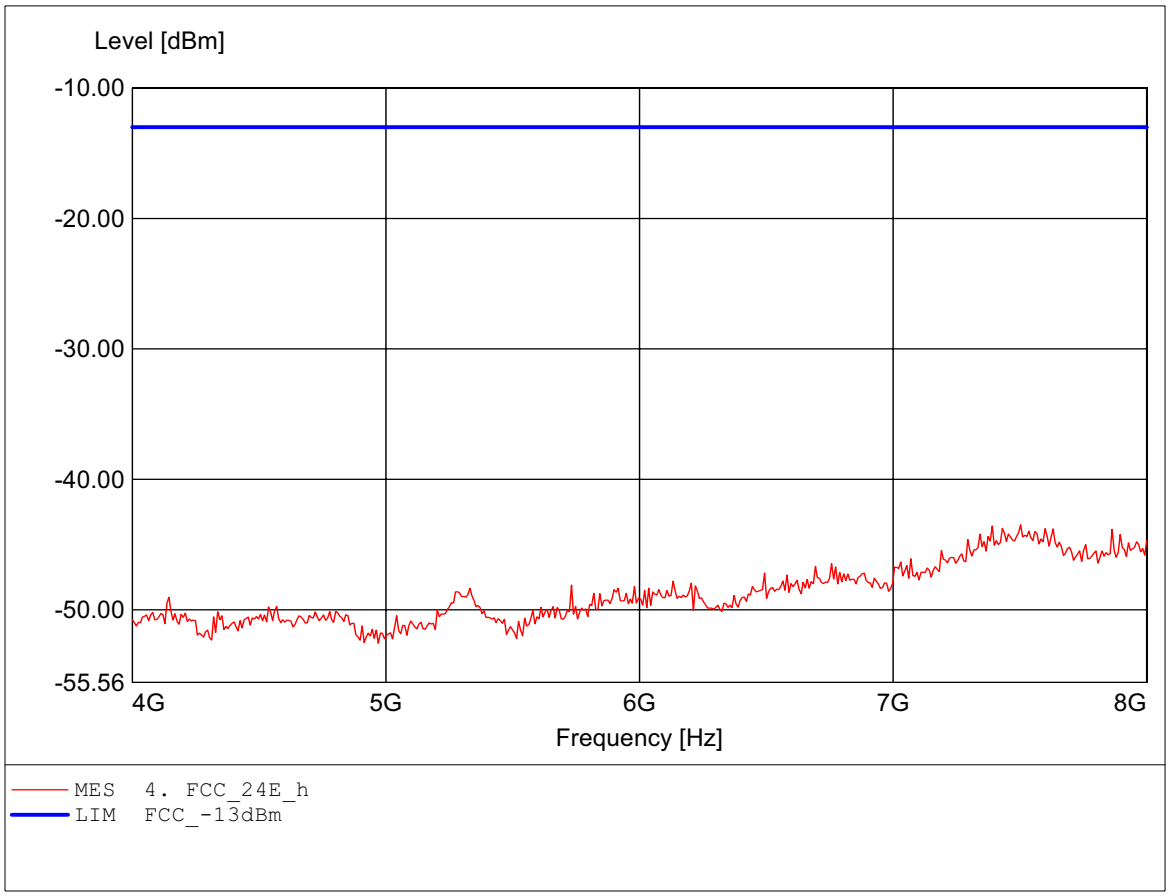
```
Order Number :        W6M20610-7519          ch810
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025
                      Freq: 3.820GHz, Pmax: -29.56dBm, RBW: 1MHz/3kHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

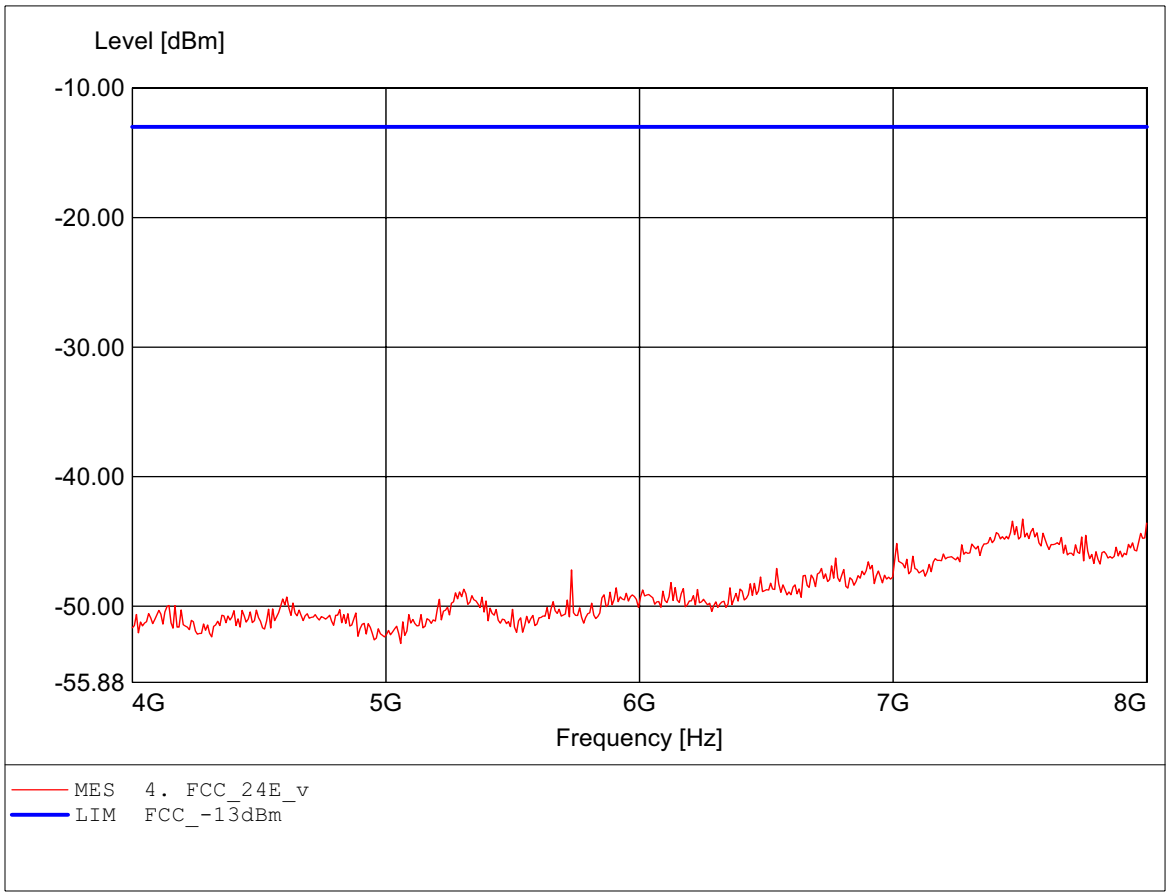
Order Number :	W6M20610-7519	ch810
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.	
	Freq: 7.503GHz, Pmax: -43.48dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

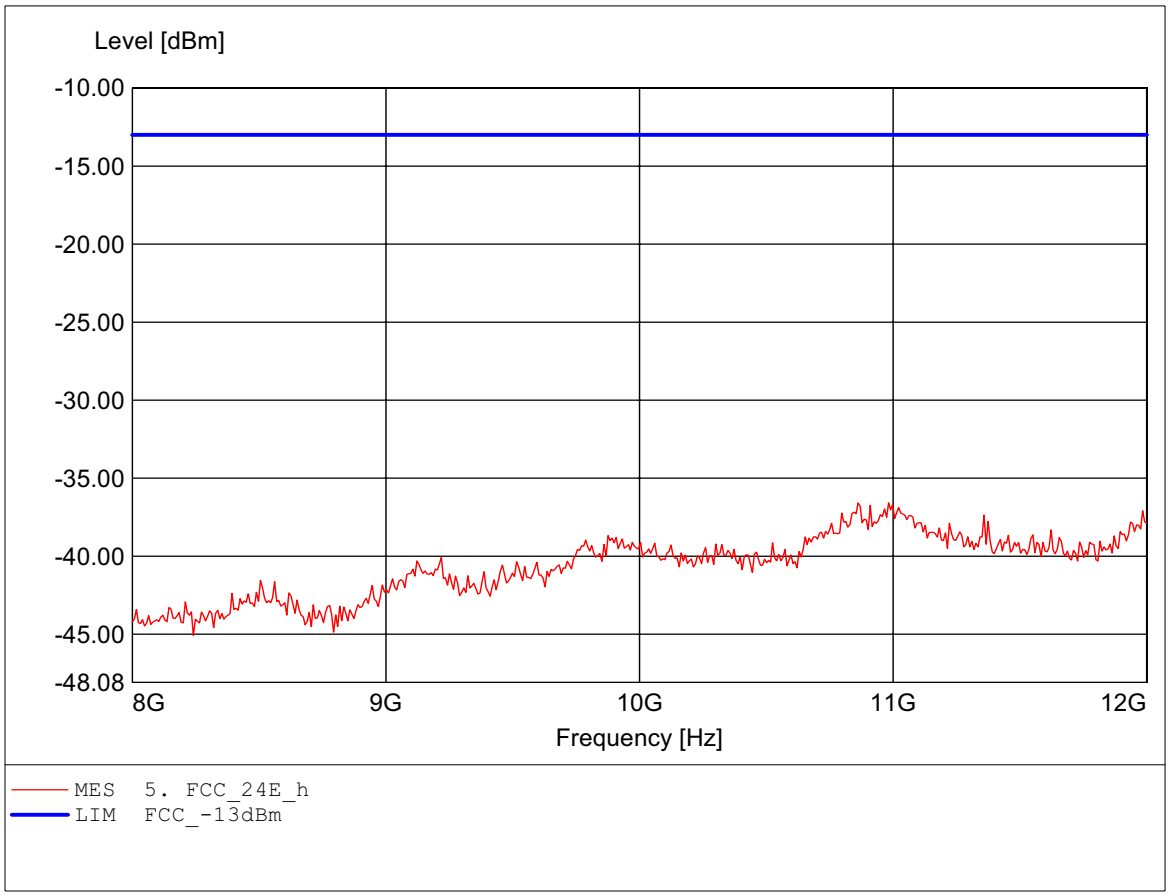
Order Number :	W6M20610-7519	ch810
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.	
	Freq: 7.511GHz, Pmax: -43.28dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

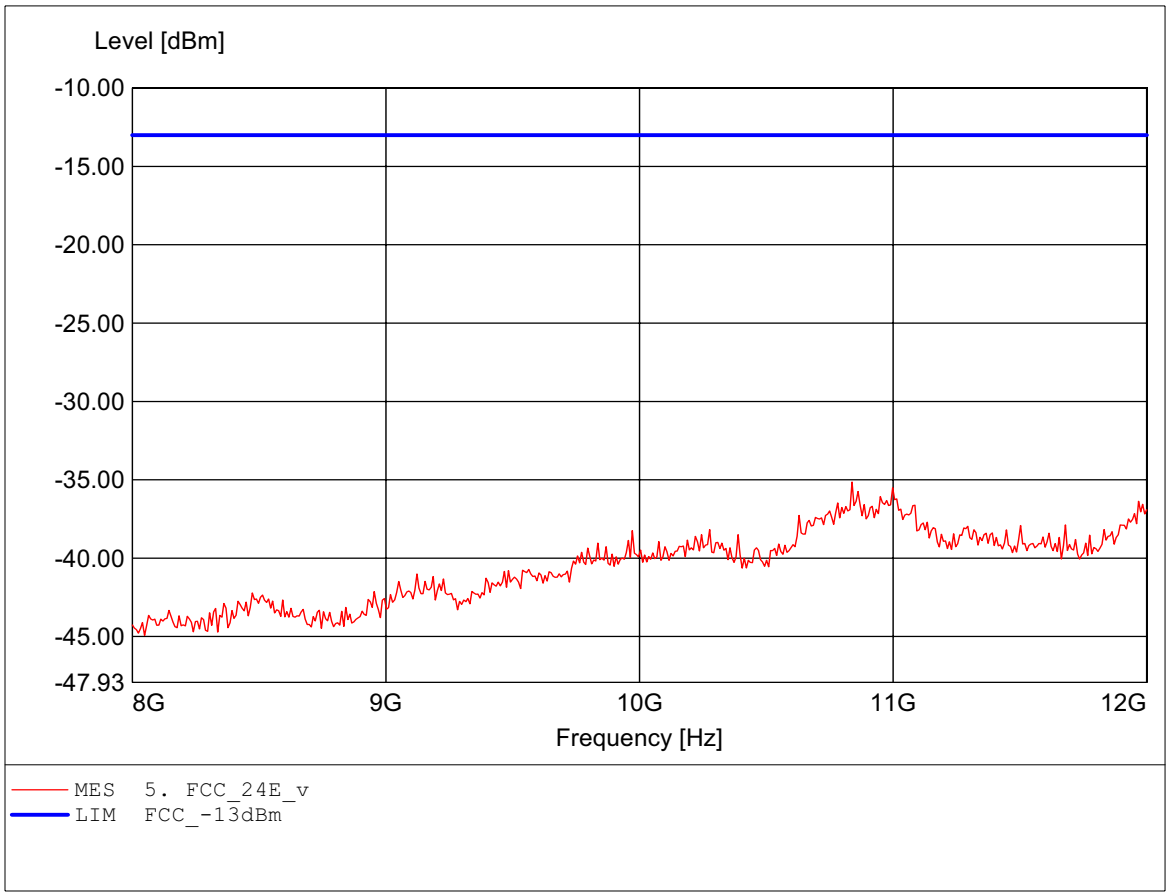
Order Number :	W6M20610-7519	ch810
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.	
	Freq: 10.982GHz, Pmax: -36.58dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

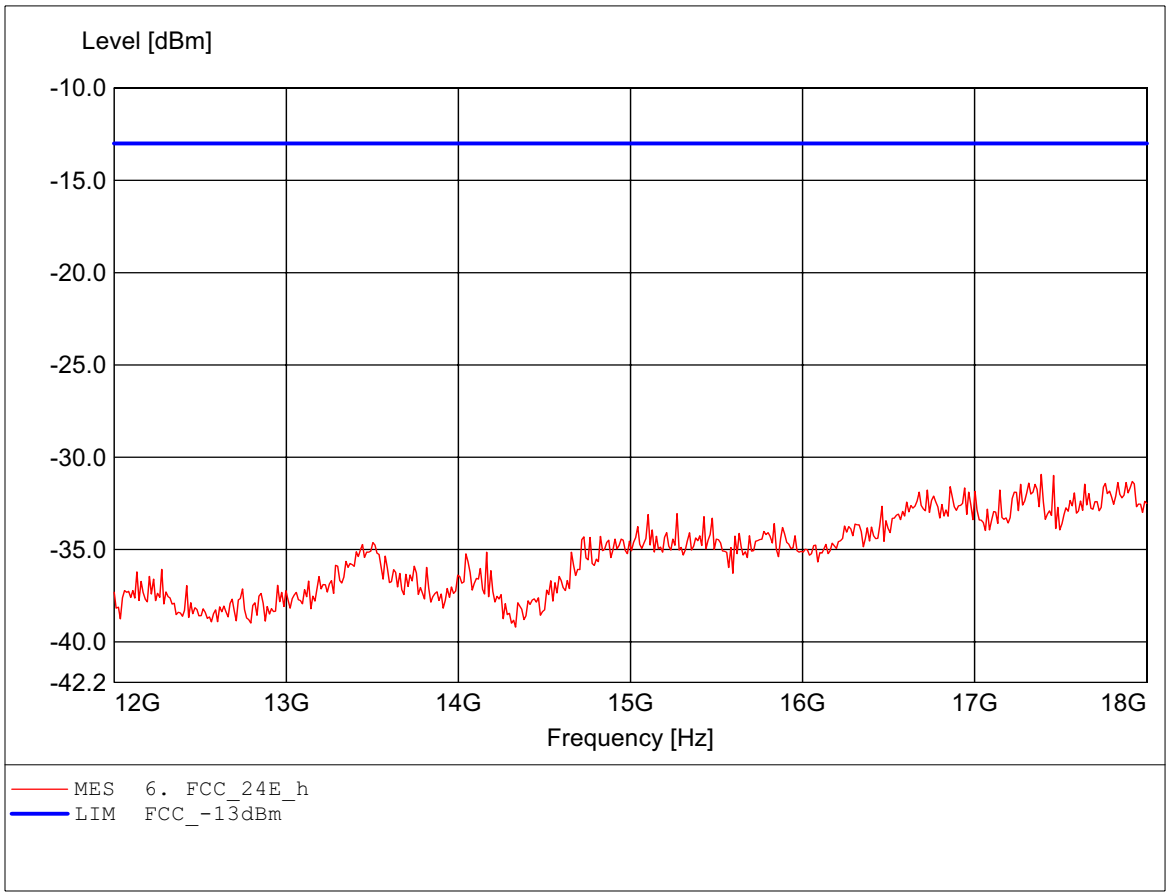
```
Order Number :        W6M20610-7519          ch810
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, ampl.+HP.
                      Freq: 10.838GHz, Pmax: -35.14dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

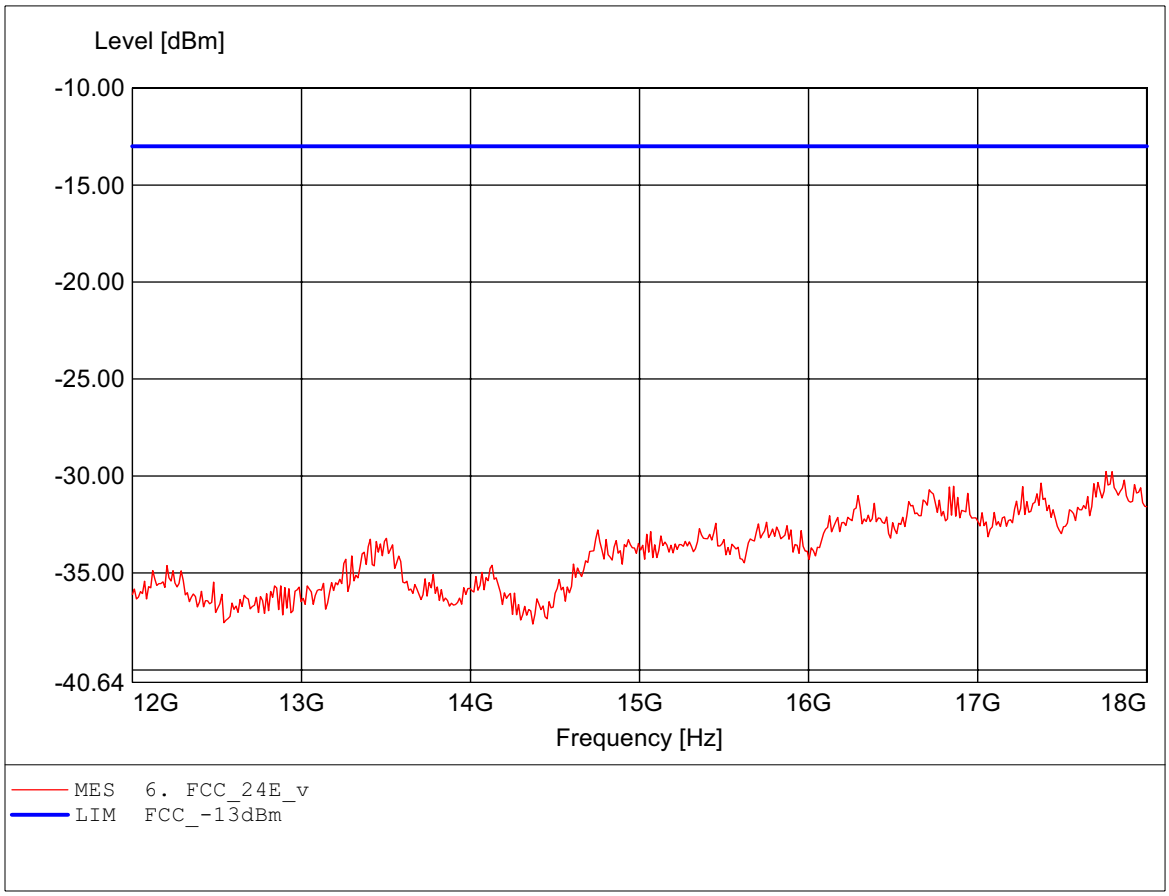
Order Number :	W6M20610-7519	ch810
Test Site / Operator:	ETS / Charles	
Temperature:	Temp.: 23.9°C	
	according to $24.238	
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.	
	Freq: 17.387GHz, Pmax: -30.93dBm, RBW: 1MHz	



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

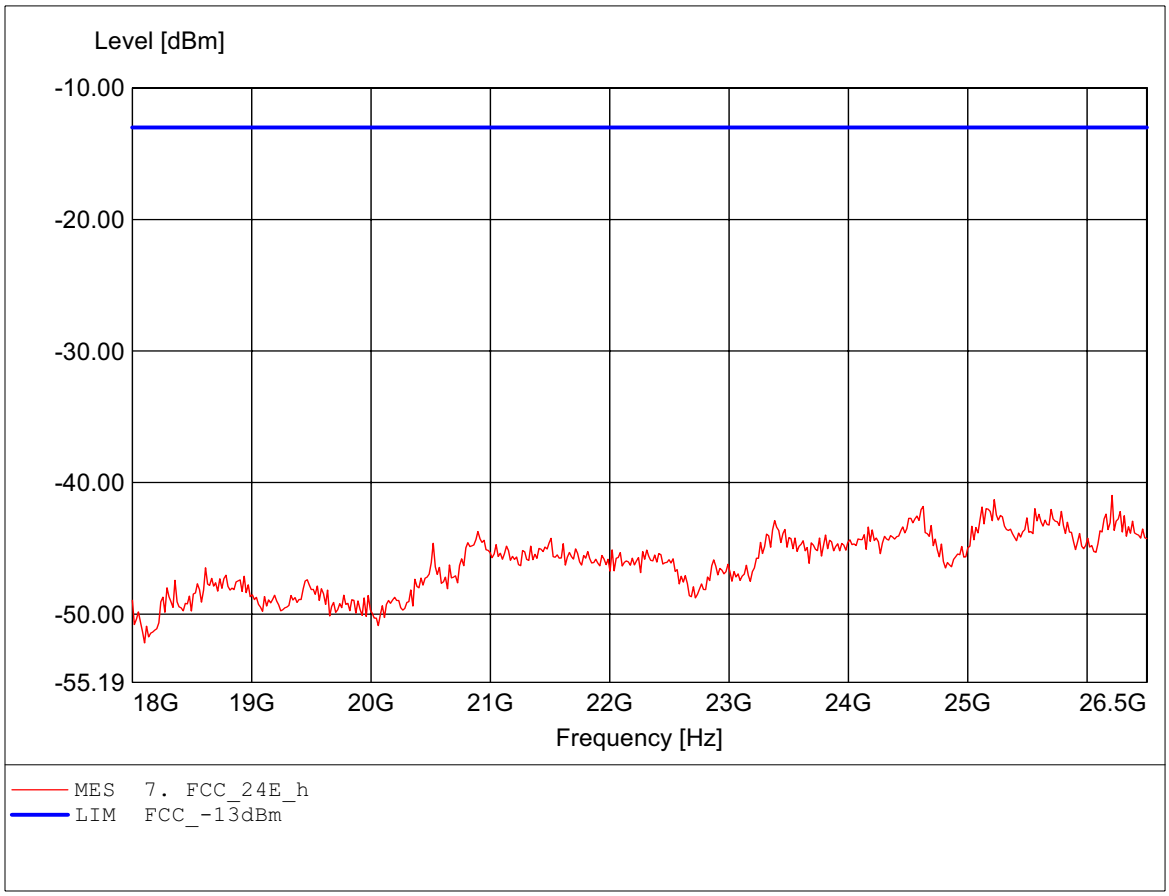
```
Order Number :          W6M20610-7519          ch810
Test Site / Operator:   ETS / Charles
Temperature:            Temp.: 23.9°C
                        according to $24.238
Comment 1:              Dist.: 3m, Ant.: HL025, ampl.+HP.
                        Freq: 17.760GHz, Pmax: -29.77dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

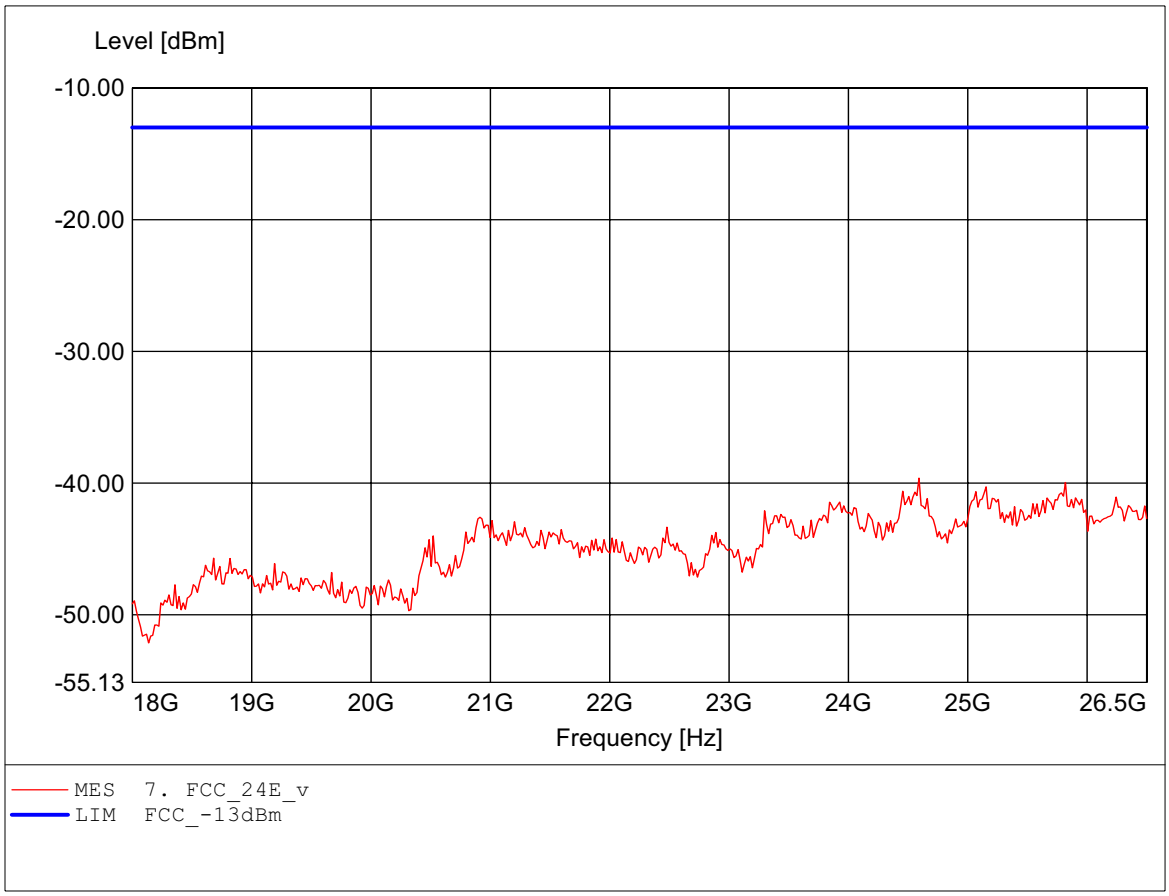
```
Order Number :        W6M20610-7519          ch810
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, amplif.
                      Freq: 26.210GHz, Pmax: -40.98dBm, RBW: 1MHz
```



Radiated Emissions Tx

FCC RULES PART 24 SUBPART E

```
Order Number :        W6M20610-7519          ch810
Test Site / Operator: ETS / Charles
Temperature:          Temp.: 23.9°C
                      according to $24.238
Comment 1:            Dist.: 3m, Ant.: HL025, amplif.
                      Freq: 24.592GHz, Pmax: -39.63dBm, RBW: 1MHz
```



Appendix E

EUT Photos